Sindoh

Unmistakable

A1 Series

User Manual

- Read the User manual before operating the product, and keep the manual at a convenient place near the product.

3dprinter.sindoh.com

Safety Instructions

Be sure to observe the following instructions when using the device..

⚠ Warning: Failure to observe the instructions may lead to death or serious injury.

- Directly plug the power cord in the receptacle on the wall. Do not use extension cord.
- If the power cable or plug is worn or damaged, pull out the power plug.
- The exposure of the interior of the machine can cause electric shock or burns.
- Do not remove covers or screws other than specified in this manual.
- Do not place the device in a highly moist environment as it may cause deformation and malfunction.
- Avoid contact of electrical terminal with metal products such as necklaces, coins, keys, watches, etc.
- Do not hold the interior parts to lift or move the device.
- Turn off the power and pull out the power plug under the following circumstances;
  - When in contact with liquid
  - When in need for a service or repair request
  - When the device cover is damaged
- For the method of disposal, contact local service center or use a proper collection site.
- Please turn off the power when leaving the office after business hours or in circumstances when machine is unoccupied for a long period of time as it may cause abrupt fire accidents.

⚠ Caution: Failure to observe instructions may cause injuries or damages to property

- Protect device from humid or wet conditions e.g. rain, snow, etc.
- Remove power cord from receptacle on the wall before moving device.
- Be careful not to damage power cord while device is being moved.
- When removing the power cord, please pull the plug and hot the power cable.
- Be cautious of clips, staples and any other small metal objects from falling inside the device.
- Please be cautious on safety when touching the interior of the machine, e.g. cleaning the interior
- Do not dispose of device or consumables together with household waste. For the method of disposal, please contact local service center or use a proper collection site.
- Our product maintains high quality standards and performance.
  It is recommended to use genuine components only.
  Components can be acquired from any authorized distributors.

Before using the device

Thank you for purchasing our product.

This user manual contains detailed information about correct use of device and easy maintenance to maintain the optimal state, and to contribute to the rationalization of office work of your company

Please carefully read the user manual before using the device and keep close at hand.
In order to use the device correctly and safely, please carefully note the precautions before use.

Prohibition and limitation

1. This use manual has been created for the convenience of the users, so actual product may differ from image and explanations shown.

2. The contents of this user manual are subject to be changed without notice. We are not responsible for the direct and/or indirect loss or damages caused by results of handling or operating the product in any case and for results occurring from user's negligence.

3. The copyrighted literary works can be duplicated and used for personal use or household use and within the same parameter. In other cases than the aforementioned, it is prohibited by law.

4. The above details present only a part of the applicable laws and regulations. Details on these laws/regulations may not be stated as they are. We do not guarantee its correctness and completeness. Please consult a legal advisor to check if the object you intend to print is legal.

5. User is responsible for all loss derived from modification of the product executed by the user or third party.

6. Font used in the user manual is the "NANUM" font provided by NAVER.

Contents

Before using the device

Chapter.1 Preparations for Machine Operation

Chapter.2 UI Menu Function

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1. Preface

This user manual describes detailed explanations and points to note in operating the device. Please read the user manual very carefully before starting use of the device, and keep it for reference purpose at close.

Important

- The contents of the user manual is subject to be changed without any prior notifications.
  Sindoh shall not be liable for consequential, special, indirect damages or losses caused by the handling or operating of the machine or by the user's negligence.

- Copyrighted works can be printed and used for home and/or personal use; other usage is prohibited by law.

- The above details present only a part of the applicable laws and regulations and the details of the law may not stated as they are. Sindoh is not responsible for its correctness and completeness.
  Please consult your legal advisor to check if the object you intend to print is legal.

Note

- The user manual may include a little different descriptions of the device from the actual one.
  Some options may not be available in some countries. Please contact local distributor for details.
  Some standard units are optional in some countries.
  Please consult your local service center.

- In some countries, some models are not available.
  Please consult your local sales office.

- This manual uses metric units of measurements.

- Font used in the user manual is the "NANUM" font provided by NAVER.

2. Conventions

Symbols

This manual uses the following symbols and meanings.

⚠ Warning

- Indicates important safety notes.
  Ignoring these notes could result in serious injury or death.
  Be sure to read these notes carefully for your safe operations of the device.

⚠ Caution

- Indicates important safety notes.
  Ignoring these notes could result in minor injury or damage to the machine or to property.
  Be sure to read these notes carefully for your safe operations of the device.

Important

- Indicates points to pay attention to when using the device, and explanations of likely causes of resin misuse, damage to originals, or loss of data.
  Be sure to read these explanations before operating the device..

Note

- Indicates supplementary explanations of the device's functions, and instructions on resolving user errors.

Reference

- Indicates supplementary explanations of the device's functions, and instructions on resolving user errors.

[ ]

Indicates the messages or menus that appear on the device's LCD display panel.

【 】

Indicates the names of each function keys on the device control panel and display window.

3. Safety Information

Please plug the power cord into a properly grounded outlet with is near and quickly accessible from the device.
Do not use or place the machine in wet or humid environment.
This device is very sophisticated 3D printing device, so please keep in mind the following safety information for safe use.

⚠ Caution

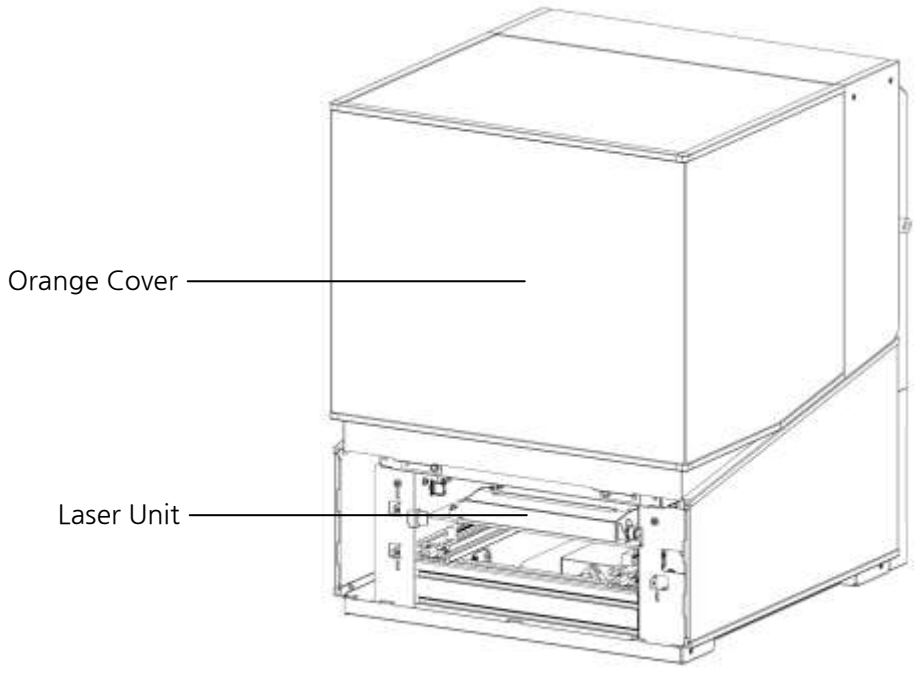
Prohibition of modification by user

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.
Do not modify the device at user's will in any cases. Warranty will be void if user modifies or changes the device. Furthermore, user may be exposed to potential dangers.

⚠ Caution

Internal laser radiation

- Typical Wavelength : 405 nm
- This machine uses GaAs laser diode with a wavelength of 400~410nm and an output of Max. 450 mW (Class 3B).
- The laser diode and polygon mirrors are incorporated in laser unit.
- Laser unit is NOT A FIELD SERVICE ITEM.
  Therefore, laser unit must not be opened under any circumstances.
- This machine is classified as Class 1 Laser Product by using external covers.
  Orange cover cuts off internal laser radiation to protect users from exposure to Class 3B laser radiation.
  Be careful not to cause damages such as cracks or breakage to orange cover due to impact.
  If orange cover is cracked or broken, stop using the device immediately and contact a local service center for repair.



⚠ Caution

Laser safety

The Center for Devices and Radiological Health (CDRH) prohibits the repair of laser based optical units in the field. The optical housing unit can only be repaired in a factory or at a location with the requisite equipment. The laser subsystem is replaceable in the field by a qualified Customer -Engineer. The laser chassis is not repairable in the field. Customer engineers are therefore directed -to return all chassis and laser subsystems to the factory or service depot when replacement of the optical subsystem is required.

⚠ Caution

Exterior covers

Do not remove exterior covers. Removing covers can make user exposed to serious dangers, and will make warranty of the device void.

⚠ Caution

Resin

Nitril gloves should be worn in case of handling resin to preventing contact with resin. Wearing protective glass is strongly recommended to prevent splashing of resin into eyes. Be careful not to let resin accidentally enter inside the body through nose or mouth.

⚠ Caution

Finishing tools

Some of finishing tools being used to handle printed outputs such as scrappers, knives, tweezers, nippers, etc) have sharp edges. Handle them with caution because it may cause injury or hazardous situations in sudden.

⚠ Caution

Pain

Contact with this part may cause pain. To avoid personal pain or damages to the device, you need to follow the instructions below before moving the device.

- Do not open the orange cover during machine operation.
- Do not put any parts of your body or small things like necklace, hair, etc in the machine during machine operation. It may cause personal pain or damages to the device.
- When unplugging the power cord, please turn off the device using power button first and remove power cord from the power outlet.
- Unplug and release all cords and cables before moving the machine.
- Do not use the power cords other than being provided along with this device or being approved by the manufacturer.
- Do not twist, bend, step on the power cord, or place heavy things on it.
- Be careful not to peel off the power cord, or not to overload it.
- Do not let the power cord to get caught by such as furniture or walls.
- Incorrect use of the power cord may cause fire or electric shock.
- Check the power cord periodically. When checking, unplug the power cord from the outlet.
- If any problems like malfunctions, body parts being caught inside the device, etc occur, quickly press the pause [⏸] or stop [■] button located on the touch screen.
- Regarding Issues not being described in the user manual, please contact a local service center.

⚠ Caution

Electric shock

Contact with this part may result in electric shock. To avoid electric shocks, follow the instructions below.

- Proceed your work after turning off the device and unplugging the power cord from the outlet in case of accessing the system board, or installing hardware or optional memory devices. If the device is connected with another device, turn it off and separate the cables from the device.
- This product has been designed, tested and approved to meet strict safety requirements of international safety standards. Some safety features of parts may not be guaranteed. Sindoh is not liable for problems caused by using an unauthorized spare parts or consumables.
- Be sure to turn off the power and unplug the power cord before cleaning inside and outside of the device to remove electrical hazards.

4. Precautions

4.1 Installation

⚠ Warning

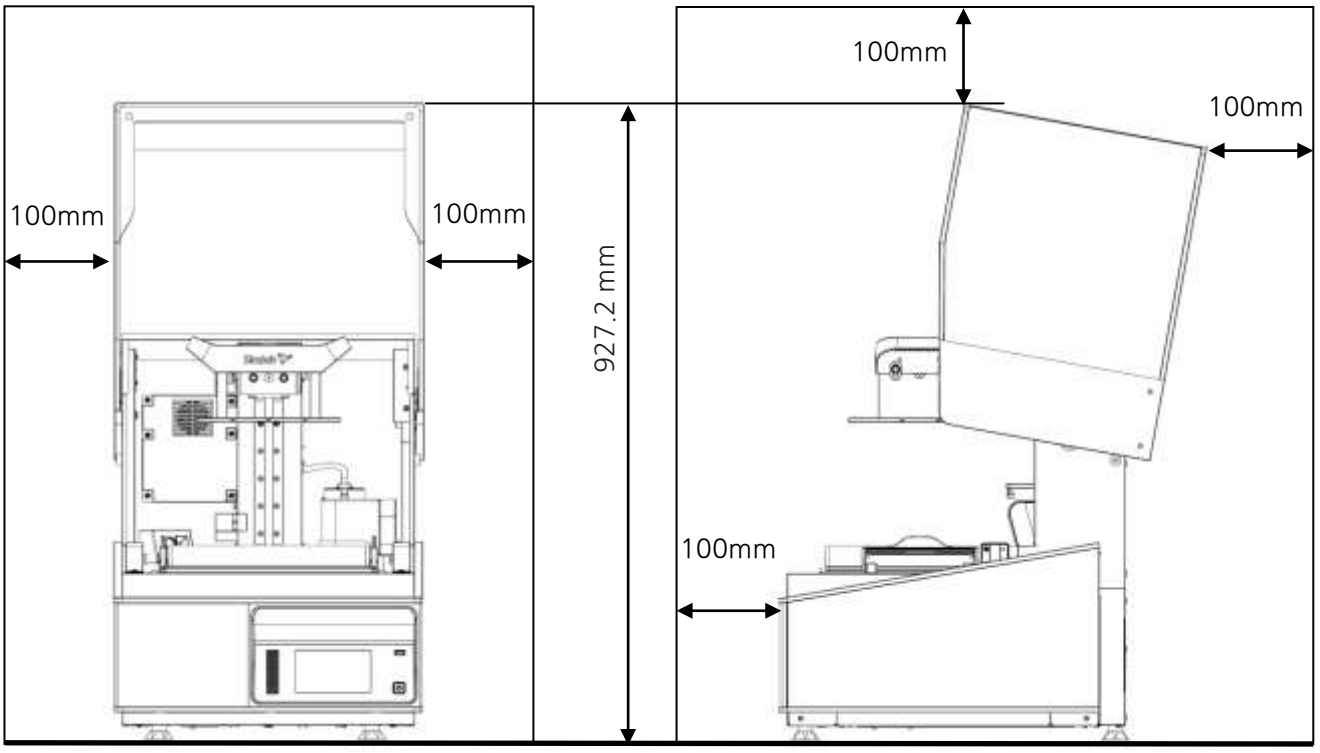
- Install the device in a well ventilated area.
- You can smell odor during the operation. It should not be harmful, but if the area of the place where the device is located is not well ventilated, make sure to ventilate the area appropriately periodically.
- Place the device in the place where it can't be touched by children, pets, etc to remove any possibilities of accidents.

ⓘ Important

- Install the device with its vents spaced at least 10cm away from walls and other equipments.
- Secure properly sufficient space around the device for easy ventilation and operation.
- Use the device at temperatures of 20℃~30℃ and relative humidity of 15%~70%.
- Do not install or use the device outside.

Front

Side

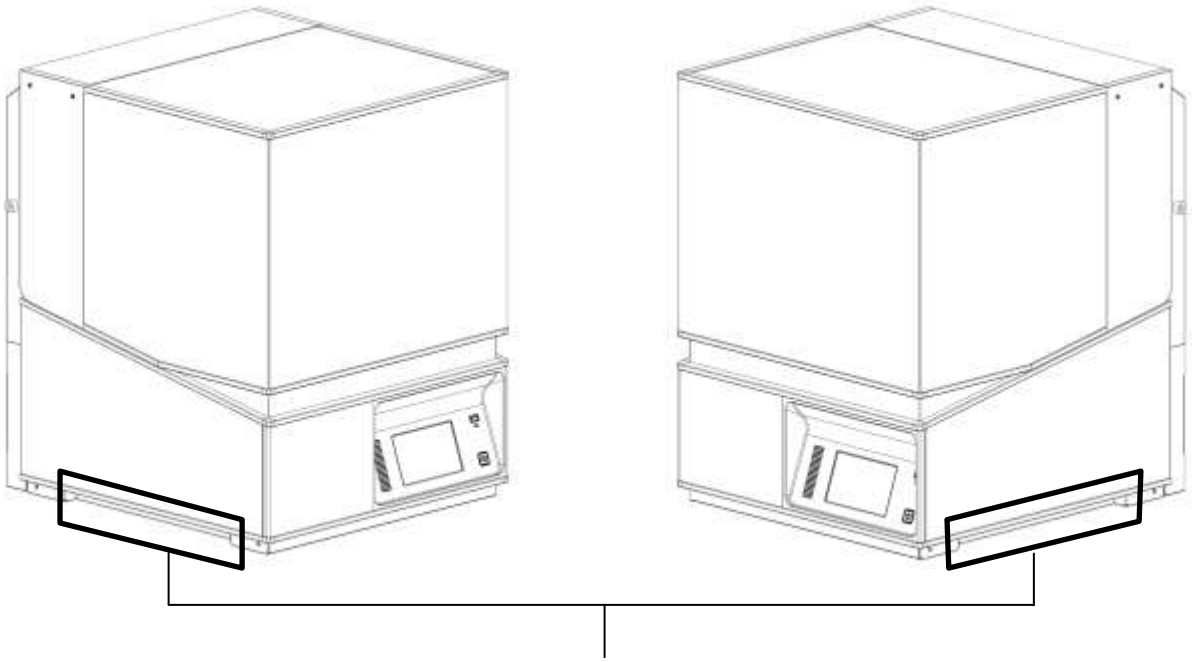


4.2 Moving the device

1. Turn off the power by pressing power button.
2. Unplug the power cord and all cables being connected the device.
3. Make sure if resin tank is removed. Otherwise, resin in the resin tank may overflow.
4. Lift the device using handles located in the left/right side of the device. Two people must work together using their both hands because the device is very heavy.

⚠ Warning

- Be sure to unplug the power cord from the outlet and remove all cables before moving the device.
- It is strongly recommended that two or more people work together for safety.
- Bend your knees enough to protect your spine when lifting the machine.
- Use lift handles. If you hold the other parts of the device, it may break them.
- Repack the device with the box provided when transporting a long distance is required. Do not tilt or upset the box after repacking because it may cause the damage of the device or malfunctions.
- Do not move the device with the orange cover opened. It may cause injuries due to the movement of cover.
- If any resin remains in the resin tank, remove the resin tank before moving the device.



Lift handles

5. Handling Consumables

⚠ Caution

- Keep consumables out of reach of children, pet, etc.
- If skin irritation occurs after touching resin, please see a doctor.

Important

- Do not keep the resin cartridge in the following places
  - Exposed to fire
  - Exposed to direct sunlight
  - Where temperature and humid may rise
  - Where sharp change of temperature may occur
  - Covered with dust
  - Inside a vehicle for a long time
- Keep resin cartridge away from physical impact or vibration.
- Do not unpack the resin cartridge from packaging box until you are just ready to use.

5.1 Resin

Followings are standard cautions to be kept during the use of resin.

- Wear nitril gloves all the time while handling the resin.
- Resins being used for this device should not be used for the food, drink and medical purposes.
- Do not eat resin of any forms.
- Do not use touch screen with hands or any tools contaminated with resin. Touch screen may malfunction if it is covered with resin.
- If storing the remaining resin is necessary, resin must be cleaned remove dirt, plastic debris, etc by filtering. Use dedicated container to store resin and seal the cap firmly.
- If resin is stored in the resin tank, it can be cured or color dye can be separated. Stir the resin with a rubber scrapper or spatula in every 24hours to mix it up well. If resin tank is damaged due to improper resin tank management, manufacture will not take a responsibility.

Important

- Please note that you shall follow our technical information or support being described in this manual at your own discretion and risk.
- Sindoh is not responsible for the use and handling of resin other than those described in this manual.
- Resin specifications can be changed without any notice.
- In case of disposal of resin, follow MSDS(Material Safety Data Sheet) instructions of resin

5.2 Isopropyl Alcohol (IPA)

- Isopropyl alcohol is supposed to be sold separately. You should consult the chemical manufacturer or supplier for more in depth safety information. Carefully follow the safety instructions provided with the isopropyl alcohol you purchase.
- Isopropyl alcohol can be flammable, even explosive, and should be kept away from heat, fire or sparks.
- Any containers holding isopropyl alcohol should be kept closed or covered when not in use because it is highly volatile.
- It is also recommended that you wear protective gloves and have good ventilation when work with IPA.
- Need to replace new IPA for the best performance regularly because it is easily diluted.

⚠ Caution

- We do not manufacture and sell Isopropyl alcohol. Consult the manufacturer for details of safety information.
- When disposing IPA, be sure to follow the instructions specified by the manufacturer or supplier.

Important

- Do not use Isopropyl alcohol or ammonia-based cleaner to clean orange cover. Acryl(PMMA) material which orange cover is made of can cause chemical reaction with some types of chemicals such as IPA, ammonia-based cleaner, etc, so that cover will be broken or deformed. Be sure to use a dedicated cleaner for acryl material.

6. Instructions for Use

⚠ Caution

- Precautions for resin
  - Wear nitril gloves all the time while handing the resin.
  - Check the remaining resin capacity before starting print. In case that manual supply of resin is necessary, check if the device is not operating and supply resin into tank very slowly in order to prevent bubbles because bubbles can degrade the print quality.
- Precautions for resin tank
  - Underneath the resin tank, there is transparent sheet made of Teflon. The print quality can be degraded if the sheet is damaged or deformed due to user's carelessness. Replace the transparent sheet or resin tank itself as soon as sheet damage or deformation is found.
- Precautions for platform
  - Use a scrapper to remove prints from the platform.
  - After removing prints from the platform, it should be cleaned up for the next print job.
- Never operate the device in the way this manual does not specifically instruct.
- Never try to open orange cover. It may cause degradation of print quality, print failure and damage on eyes due to laser exposure.

Notification for California customers, USA

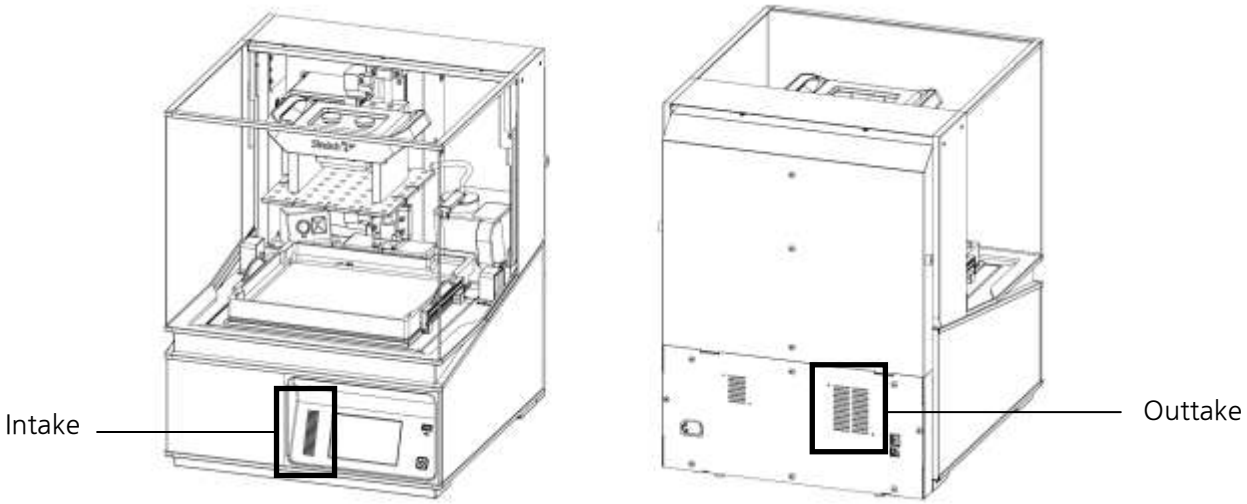
⚠ Warning

- This product uses chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. This appliance and its accessories can cause low-level exposure to chemicals during operation, which can be reduced by operating the appliance in a well ventilated area.

7. Ventilation

⚠ Caution

- Use the machine in a place with good ventilation. If the machine is used in a place without good ventilation, this may be harmful for your health. Ventilate it on a regular basis.
- Do not block vents. Inappropriate cooling may lead to high temperatures inside the machine.
- In general, a new machine may produce small amount of gaseous components, so ensure good ventilation when the machine is used for the first time. If the machine is in operation for an extended time, do not stay in the same room for a long time.



8. Notices

❖ Noise Emission Level

The following noise level is measured in accordance of ISO 7779 and reported to meet ISO 9296.
Some modes may not be available in products you purchased.

Average Sound Pressure at 1 Meter Away	
Printing	45dBA
Standby	Under 40dBA

❖ Temperature/Humidity

- **Machine**

Operation	20℃~30℃ , 15%RH~70%RH
Shipping	-20℃~40℃, 15%RH~95%RH (for 0℃ or lower temperature, room temperature should be higher than the outdoor's, must not touch the floor)
Storage	-20℃~40℃, Below 80%RH (No condensation, must not touch the floor)

- **Resin Cartridge**

Shipping	10℃~50℃, 15%RH~95%RH (Must be sealed)
Storage	15℃~35℃, 20%RH~70%RH (Must be sealed, any light source must not exist)

❖ Disposal of the Products

Do not dispose the machine and consumables together with household wastes.
For disposal or recycling, contact your local sales office.

❖ EMI(Electromagnecit Interference) Notice

This machine complies with the limits for Class A.
Class (Industrial Device) : This is a class A Product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

① **FCC COMPLIANCE STATEMENT**

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

② **INFORMATION TO USER**

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.
This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one m ore of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

③ **CAUTION**

Any changes or modifications not expressly approved by the manufacturer responsible for compliance could void the user's authority to operate the equipment.

④ **This product has the certification issued under the authority of the FCC by one of Certification Body.**

FCC ID : 2AB83-A1

⑤ **IC Compliance**

This Class [A] digital apparatus complies with Canadian ICES-003.
Cet appareil num rique de la classe [A] est conforme la norme NMB-003 du Canada.

❖ Wireless LAN Specifications

The wireless device may be affected by electromagnetic interference so it should not be used for like saving services.

❖ WLAN Notice

Exposure to radio frequency radiation:
The following notice is applicable if your printer has a wireless network card installed.
The radiated output power of this device is far below the FCC radio frequency exposure limits.
A minimum clearance of 20 cm (8 inches) must be maintained between the antenna and any persons for this device to satisfy the RF exposure requirements of the FCC.

❖ Power Consumption

Power Consumption of the Products:
The table below shows power consumption.

Mode	Description	Power Consumption
Printing	A device is printing using electronic input data.	250W
Standby	A device is in standby mode.	50W (Heater OFF) 160W (Heater ON)
Power Off	A power plug is plugged into the outlet with the machine's switch off.	Less than 0.5W

The above power consumption is the hourly average value.
Instant power consumption can be much higher than the average value.

Deactivated Mode

The machine consumes power even in the deactivated mode. Unplug the power cord to completely stop the power consumption.

Total Energy Usage

It would be useful to calculate the Total energy usage of the machine.
Since the electricity bill is charged in Watt unit, you have to multiply time spent in each mode by power consumption in order to calculate the energy use.
Total energy usage is the sum of energy used in each mode.

Condensation

Dramatic change of the ambient temperature may produce water droplets on the interior and exterior of the machine. Wipe the water droplets on the outer surface, but for the inside please let them dry off by leaving front door and cover opened.

Notice of Laser

This machine is certified in the U.S. to conform to the requirements of DHHS21 CFR Subchapter J for Class 1 laser products, and elsewhere is certified as a Class 1 laser product conforming to the requirements of IEC 60825-1:2014.

Class 1 laser products are not considered to be hazardous.

The laser system and machine are designed so there is never any human access to laser radiation above a Class 1 level during normal operation, user maintenance or prescribed service condition.

Caution Notation and Label

Laser caution label appears on this machine at the following position. Be very careful that an accident does not occur during operations.

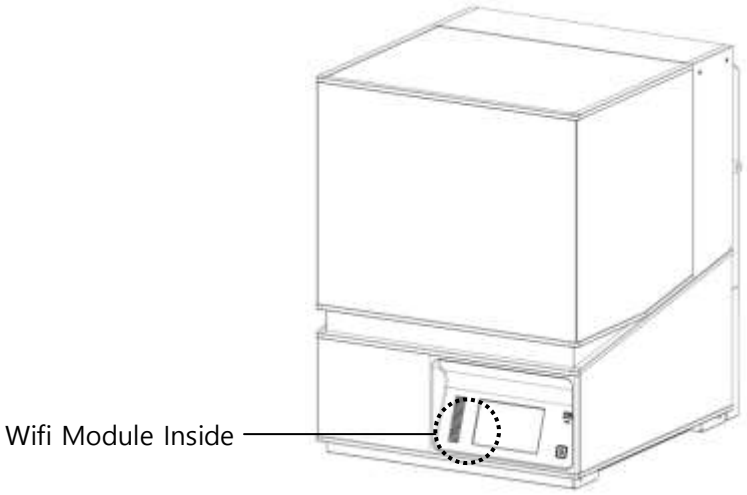
Do not remove caution labels or notations. If you can't make them legible, or if caution label or notation is damaged, please contact your service representative.

9. Disposal of Used Battery

Control board uses a Lithium battery.
Please discard used batteries following the environmentally friendly procedure stated on the manufacturer guidelines.
To replace batteries, please contact a qualified service engineer.

10. Wifi Module Disclaimer

❖ This device includes a WIFI module compatible only with Sindoh's 3D Printer models.



❖ Precautions

- This Wifi module can cause radio interference, therefore it should not be used for any purposes related to human lives.
- Do not expose this product to water, humidity or liquid.
- Do not expose this product to direct light, hot temperature or fire.

⚠ Caution

- If the machine has been modified by unauthorized personnel, Sindoh is not liable for the machine trouble or failure.

⚠ Warning

- To prevent RF signals that exceed FCC RF exposure limits from being exposed to human, this module has been mounted in a place that minimizes human access.

❖ Precautions

Frequency	IEEE 802.11b : 2412MHz ~ 2462MHz IEEE 802.11g : 2412MHz ~ 2462MHz IEEE 802.11n(20MHz) : 2412MHz ~ 2462MHz IEEE 802.11n(40MHz) : 2422MHz ~ 2452MHz
Antenna Power Density	IEEE 802.11b : 10mW(10dbm)/MHz IEEE 802.11g : 10mW(10dbm)/MHz IEEE 802.11n(20MHz) : 10mW(10dbm)/MHz IEEE 802.11n(40MHz) : 10mW(10dbm)/MHz
No. of Channels	IEEE 802.11b : 11 IEEE 802.11g : 11 IEEE 802.11n(20MHz) : 11 IEEE 802.11n(40MHz) : 7
Modulation	IEEE 802.11b : DSSS/CCK IEEE 802.11g : OFDM IEEE 802.11n(20MHz) : OFDM IEEE 802.11n(40MHz) : OFDM
Power Consumption	5V 500mA(Maximum)
Dimension	37.0mm X 28.0mm X 3.7 mm
Operation Temperature	0 ~ 60 ℃
Storage Temperature	-10 ~ 80 ℃

11. USB Memory Disclaimer

This USB Memory is compatible with all Sindoh's 3D printer products.

❖ FCC COMPLIANCE STATEMENT

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

❖ INFORMATION TO USER

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.
This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.
If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

❖ CAUTION

Any changes or modifications not expressly approved by the manufacturer responsible for compliance could void the user's authority to operate the equipment.

❖ Specification of compatible USB flash drive for A1 Series

- Please use the enclosed USB flash drive.
- The enclosed USB flash drive is in FAT32 format.
  The A1 Series 3D printer does not support USB flash drives in NTFS format.
- The warranty will not be valid if a 3rd party USB drive is used.

❖ **IC Identification on Class of ITE**

CAN ICES-3 (B)/NMB-3 (B)

DECLARATION OF CONFORMITY

Product name : USB Flash Drive
Model name : 8GB-WJ004, 4GB-WJ004
FCC Rules : Tested to comply with FCC Part 15, Class B
Operating Environment : For HOME OR OFFICE USE

Tested to Comply with FCC Standards
FOR HOME OR OFFICE USE

FCC COMPLIANCE STATEMENT

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

RESPONSIBLE PARTY

Name : Sindoh America, Ltd.
Address : 6047 Tyvola Glen Circle, Suite #115, Charlotte, NC 28217
Phone No. : 1-704-414-6690

We hereby declare that the above specified equipment with the trade name and model number was tested conforming to the applicable FCC Rules under the most accurate measurement standards possible, and that all the necessary steps have been taken and in force to assure that production units of the same equipment with the Commission's requirements.
Manufacturer : Sindoh Co., Ltd.
Address : 3, Seongsuiro24(isipsa)-gil, Seongdong-gu, Seoul, 04797 REPUBLIC OF KOREA

A1 Series
USER MANUAL

Preparations for Machine Operation

1

1. Specifications

1.1 Printing

Printing Method	SLA (Stereo Lithography Apparatus)
Max. Print Size (mm)	W(max):200, D(max):200, H(max):180
Layer Thickness Setting	0.025~0.100mm
Laser Wavelength	405nm
Laser Power	250mW
Resin	Acrylic, ABS-Like
Temperature Management	Fan Heater Type
Bed Leveling	Manual, Semi-Auto
Resin Supply	Air-Pump Type Automatic Supply with Level Sensor

1.2 Device

Power	250W
Dimensions (mm)	449 x 501 x 600 (W x D x H)
Weight	44.3Kg (excluding resin cartridge)
Ports	USB Device, USB Host, Wifi, Ethernet

1.3 Software/Support

Software Support	Sindoh Exclusive Slicer
File Format	*.stl, *.ply, *.obj
Operating System	Window 7 or Above, Mac OSX 10.10 or Above
Memory Requirements (Recommended)	DRAM 8GB+

Note

Graphic adapter must support OpenGL 2.0 or higher.

2. Components

2.1 Basic Components

Please check all basic components in the packaging box.

⚠ Caution

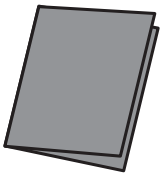
Please keep the box and packaging material; they are needed for product exchange or repair service.

3D Printer

USB Memory

Power Cable

USB Cable



Quick Start Guide

T-Handle Hexagon Wrench (M5)

2.2 Finishing Kit (Optional)

Nipper

Sprayer

Nitril Glove

Washing Tub

Cleaning Tray

Filter

Metal Scrapper

Rubber Scrapper

Platform Cleaning Brush

⚠ Warning

- The blades of the metal scrapper can be very sharp. Please be cautious. Please do not use for other than removing printables and cleaning platform.
- Please do not touch the blade of the scrapper with any of body parts in any cases.

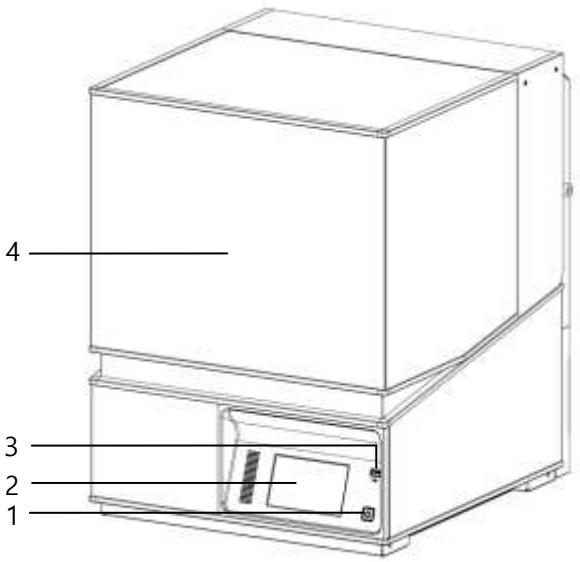
2.3 Resin Cartridge (Optional)

Resin Cartridge

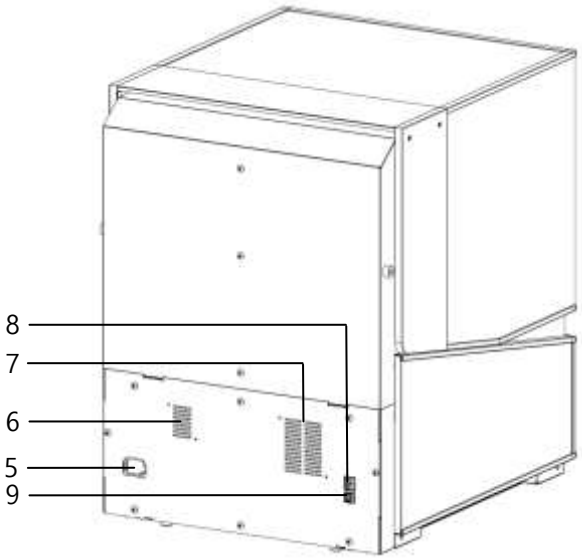
Cap for Resin Supply

3. Understanding the parts

[Front]

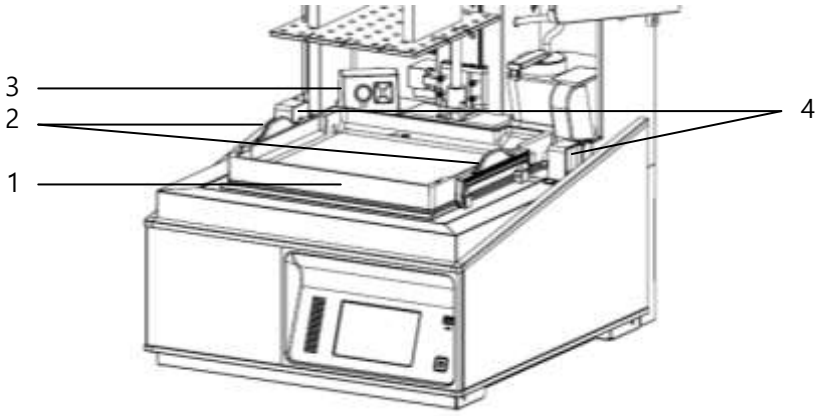


[Rear]



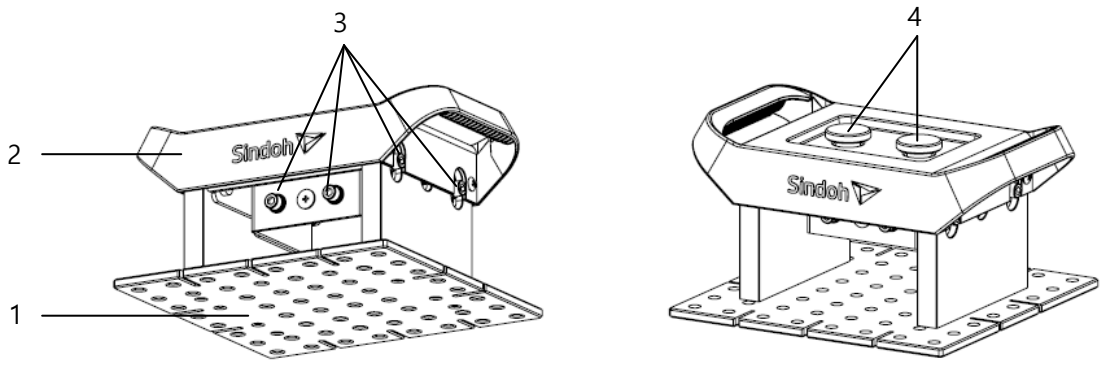
No.	Part Name	Description	
1	Power Button	Press this button shortly to turn on printer. Press and hold for more than 2 seconds to turn off the printer.	
	Power Button Indicator	Lamp ON	Power is ON
		1 second interval flickering	Can be turned on instantly (power cable is connected) ⚠ Caution - In case of not using the printer for long period of time, please unplug the power cord - The lamp may flicker for a few seconds after power cord is disconnected.
		Lamp OFF	Inactive Mode (power cord is unplugged)
2	LCD Control Panel	Screen used to control printer ⚠ Caution - Usage of printer is recommended after removing the protection film on LCD control panel. If the film is not removed, the touch screen may not work properly.	
3	USB Port	Connect USB flash drive containing printing information and print directly from USB flash drive.	
4	Orange Cover	Access to the operating area.	
5	Power Port	Power cord connector	
6	Speaker	Play warning sound.	
7	Ventilator Fan	Discharges heat from interior.	
8	LAN Port	Allows a device to connect to a network using a LAN cable.	
9	USB Port	Used to connect printer to computer with a USB cable.	
10	Carrying Handles	Handles to use when moving the printer.	

[Interior]



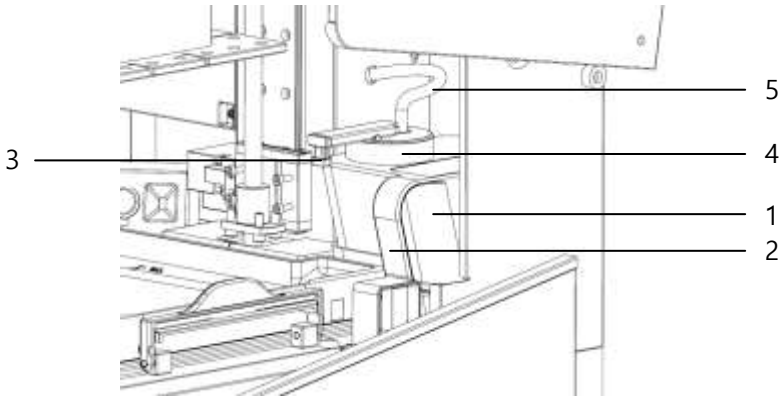
No.	Part Name	Description
1	**Resin Tank**	Working space where resin is filled and printing is processed.
2	**Resin Tank Locking Levers**	Levers that lock and unlock the resin tank.
3	**Camera**	Let users monitor how the printing is going on.
4	**Resin Level Detect Sensors**	Detect resin height to fill the optimum amount of resin in resin tank.

[Platform]



No.	Part Name	Description
1	**Platform**	Workbench to which resin is cured by laser and print is attached.
2	**Platform Handles**	Let users to hold when handling platform.
3	**Platform Locking Screws**	Fix platform after adjusting level of platform and resin tank.
4	**Platform Locking Knobs**	Fix platform after mounting.

[Resin Cartridge]



No.	Part Name	Description
1	**Resin Cartridge**	Bottle being filled with resin.
2	**Resin Cartridge Handle**	Let users hold the cartridge in case of handling it.
3	**Nozzle**	Discharges resin through it from the cartridge.
4	**Cap**	Seals cartridge
5	**Tube**	Connects air pump and cap.

4. Installation (Including Connection, Cartridge Setup and S/W Installation)

⚠ Caution

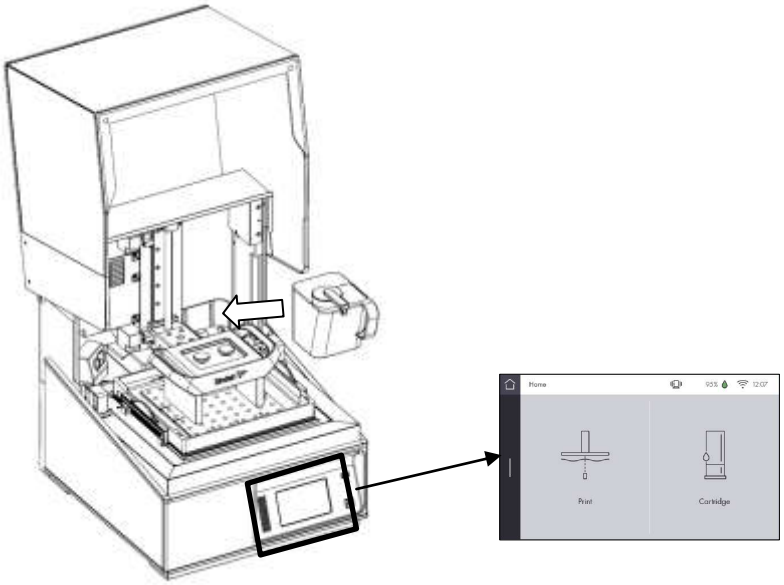
Please remove all packaging materials from inside and outside of the device. Furthermore, open the orange cover and remove all protective materials and accessories from interior.

4.1 Device Connection

1 Connect the power cable to the power socket on the rear side of the device, and connect the power cable to the power outlet.

2 Press the power button, located on the lower right of the device.

3 When the home screen is displayed on the LCD screen, install the resin cartridge. (Refer to [Resin Cartridge] of [5.Maintenance])



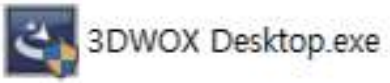
4 Connection to PC

1) Direct Connection: Connects one end of the enclosed USB cable to the back of the device and the other end to the PC.
2) Network Connection: Refer to [Network] of [2.UI Menu Function]

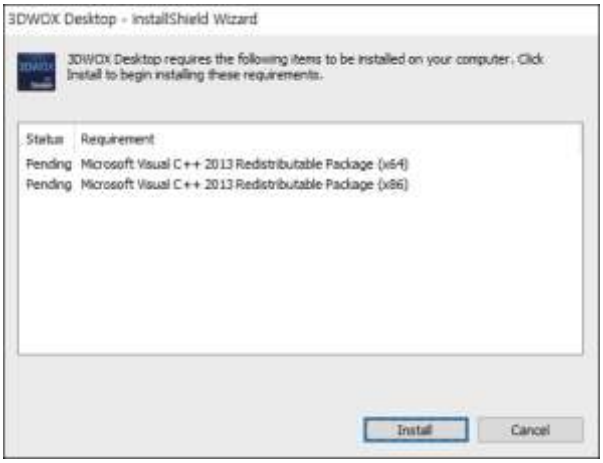
5 Plug USB flash drive in, and install machine drivers and Slicer program.

4.2 S/W Installation

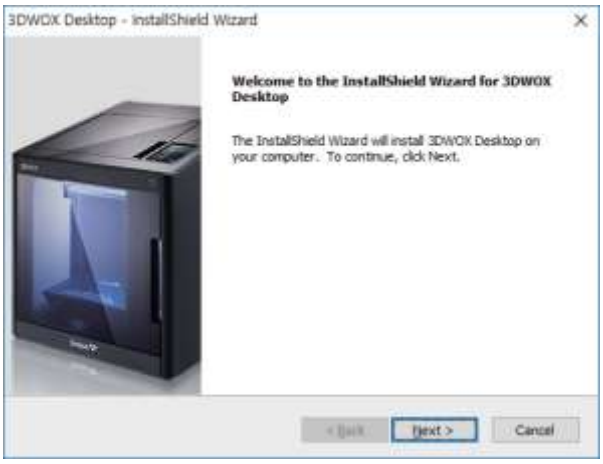
1 Start the S/W installation by clicking on “3DWOX Desktop.exe” file in the enclosed USB flash drive.



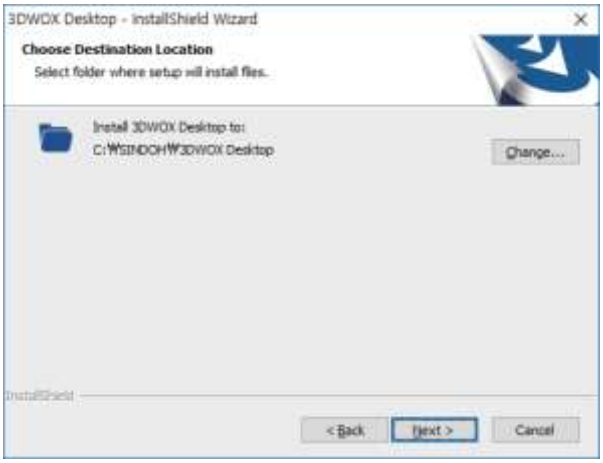
2 Install the additional files required by the software list.



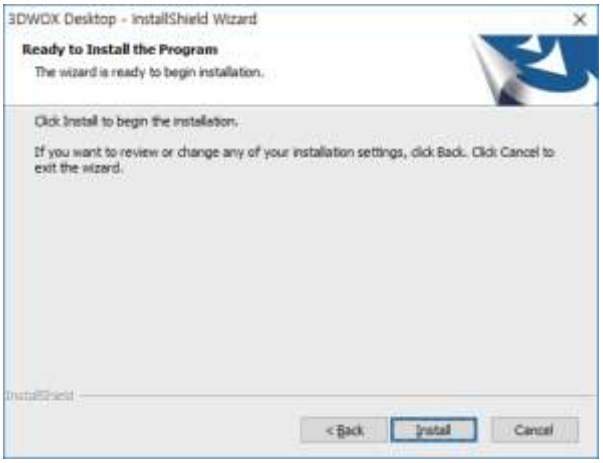
3 When installation of the file is complete, a pop-up window shows up as the picture below. Press [Next] button to initiate the installation of 3DWOX Desktop Program.

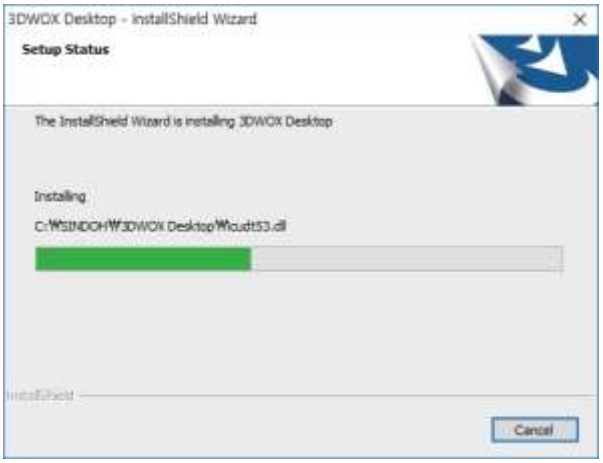


4 Choose the destination location of the files and press [Next] to proceed.

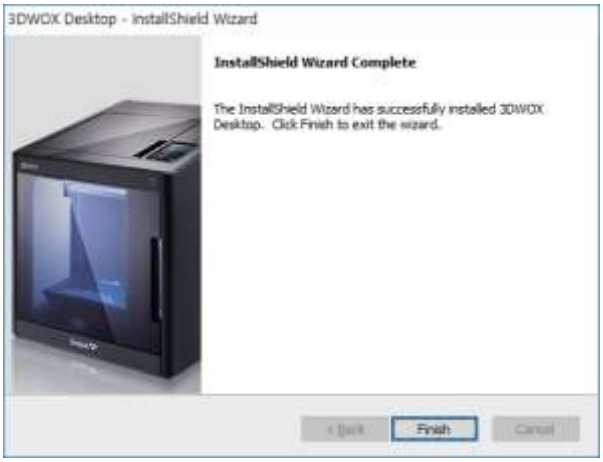


5 All configurations get saved and the installation starts.





6 After all installation is complete, you can see that “3DWORK Desktop” icon created on the desktop of your computer.



A1 Series
USER MANUAL

UI Menu Function

2

1. UI Menu Function Descriptions

Cartridge	Change Cartridge

Setting	XY Scale	
	Z Offset	
	Chamber Heating	
	Resin Auto Supply	
	Dashboard Logging	
	Network	
	Test Print	
	S/W Update	
	General	Language
		Power Saving
		Beep Sound
		Units
		Time Setting
		Time Zone Setting
		Email Setting
		Security

Saved Files

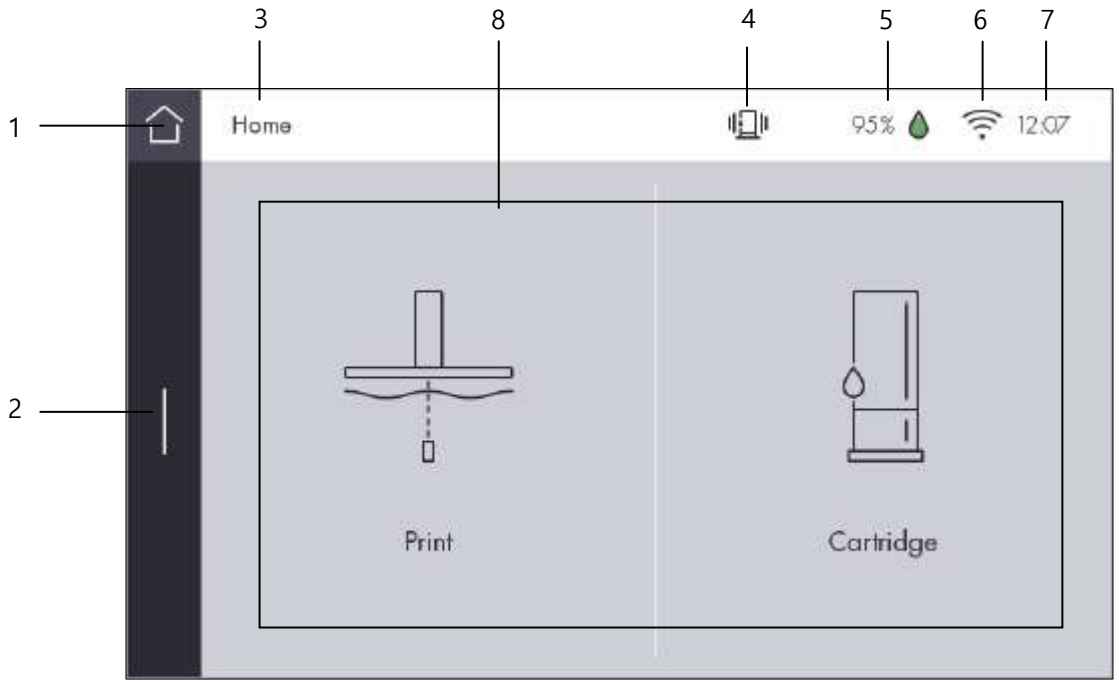
Info	Statistics
	History

Quick Guide

Programs

1.1 Home

The first screen that user can see after the device is turned ON. This is the starting point where every operations of the device start.



No.	Name	Description
1	**Home Button**	Move to Home screen.
2	**Slide Menu Bar**	Open Slide Menu.
3	**Title**	Description of the current active screen.
4	**Cartridge**	Display whether or not the resin cartridge is installed.
5	**Resin Status**	Display how much resin remains in the cartridge.
6	**Wifi**	Display the status of Wifi connection.
7	**Time**	Display the current time.
8	**Working Area**	Main workspace of UI screen.

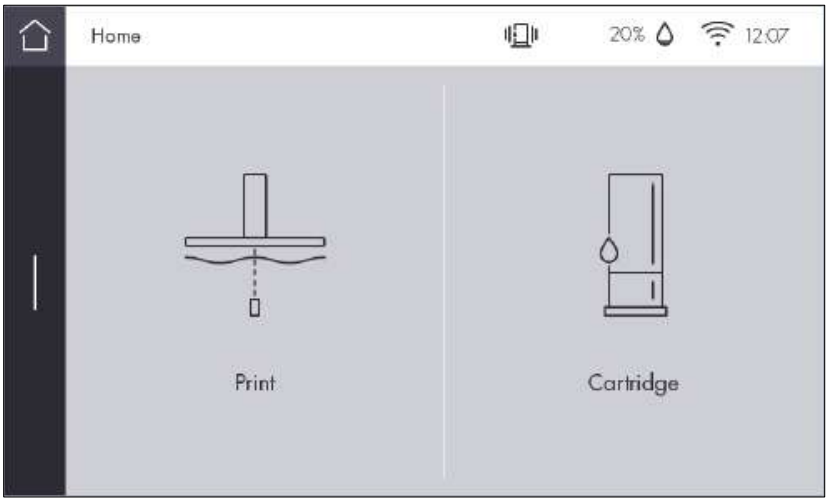
1.2 Cartridge

Cartridge	Change

Change

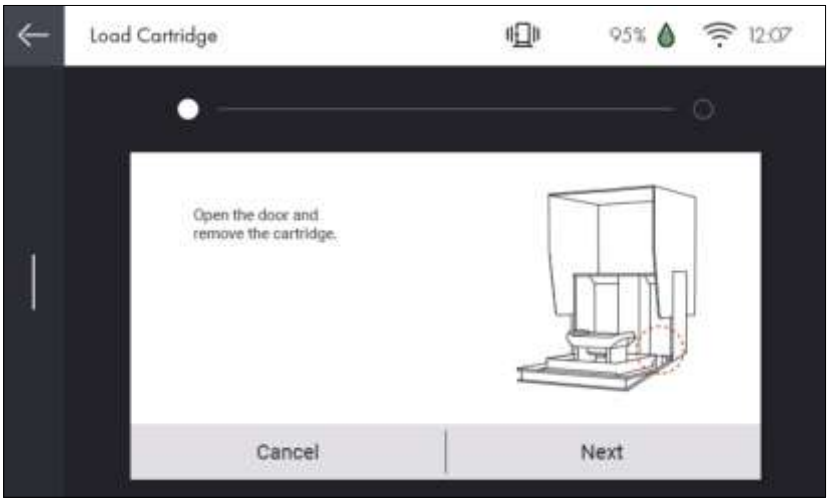
This function is used to replace the resin cartridge in case that the current resin cartridge is empty or user wants to switch to the different type of resin.

1 Press [Cartridge] from the Home screen.

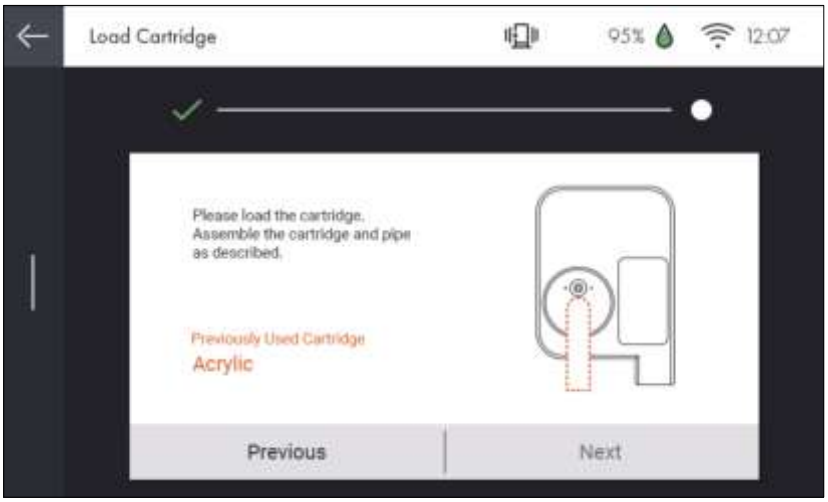


2 Press [Change].

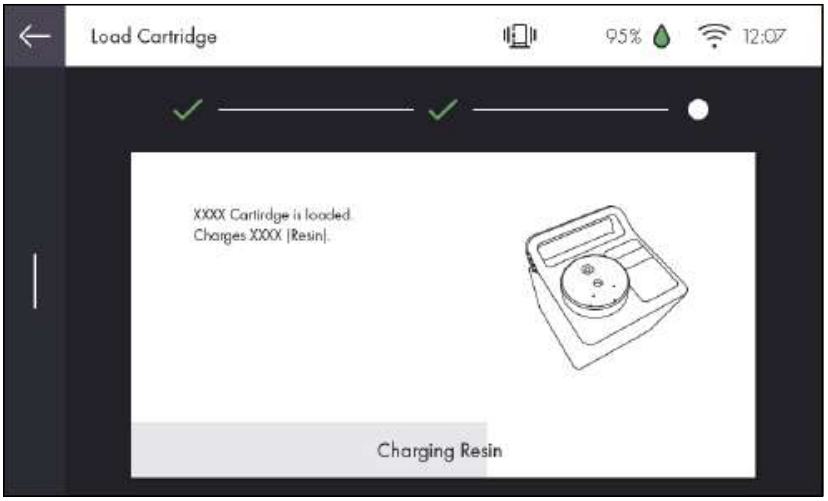
3 Open the orange cover, and remove the cartridge currently being used.



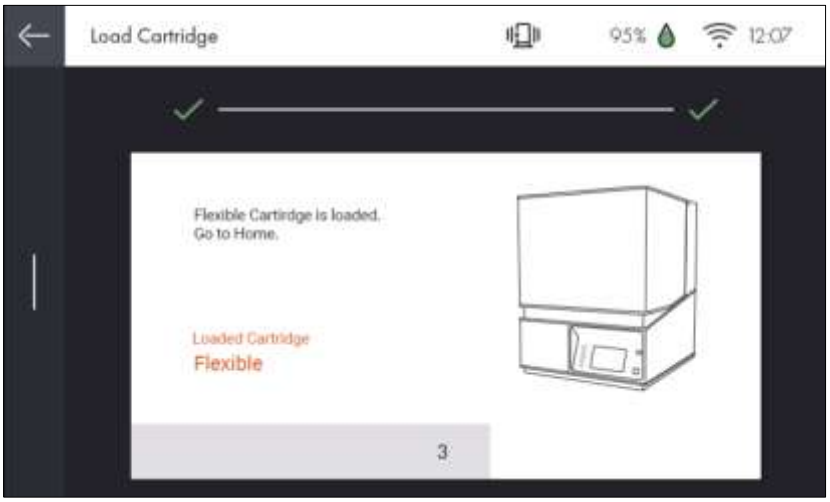
4 Replace sealing cap with resin supply cap for the new cartridge, and insert nozzle and tube as being instructed on UI screen.



5 Replace resin supply cap with sealing cap for the used cartridge, and install the new cartridge.



6 Press [Finish] when installation of the new cartridge is complete, and UI screen will be moved to Home screen in 5 seconds automatically.



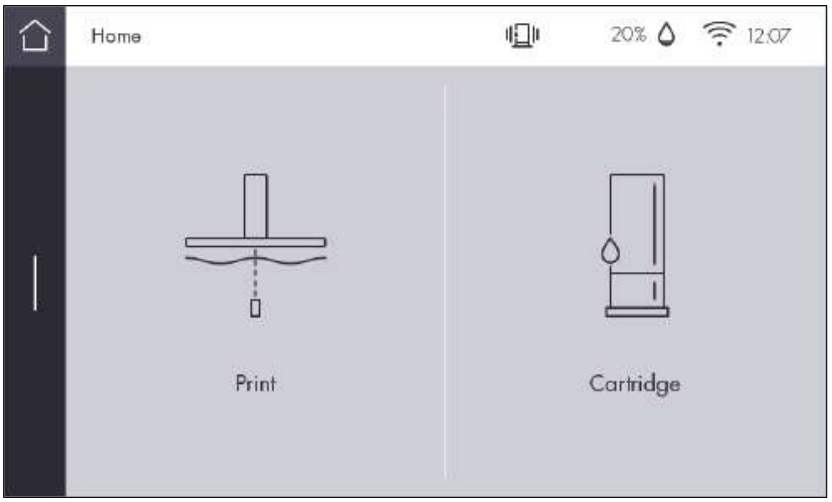
1.3 Setting

Setting	XY Scale	
	Z Offset	
	Chamber Heating	
	Resin Auto Supply	
	Dashboard Logging	
	Network	
	Test Print	
	S/W Update	
	General	Language
		Power Saving
		Beep Sound
		Units
		Time Setting
		Time Zone Setting
		Email Setting
		Security

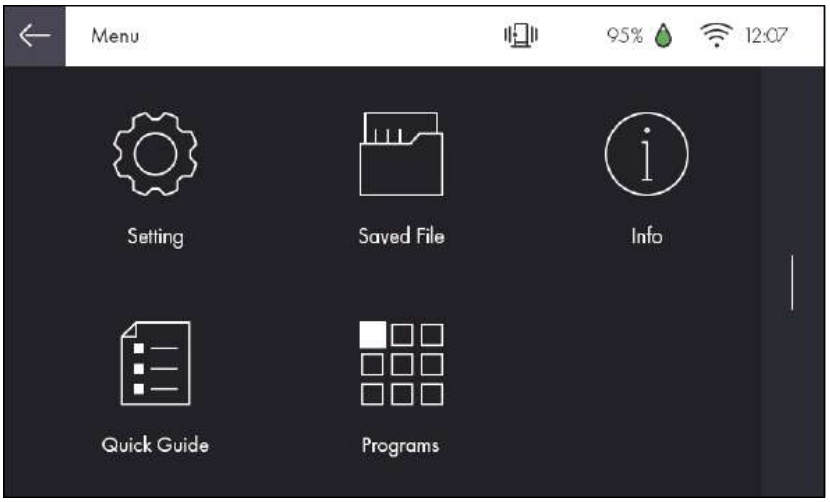
XY Scale

This function allow users to change horizontal(X)/vertical(Y) ratio of prints in case that the size difference of 3D model and actual prints exist.

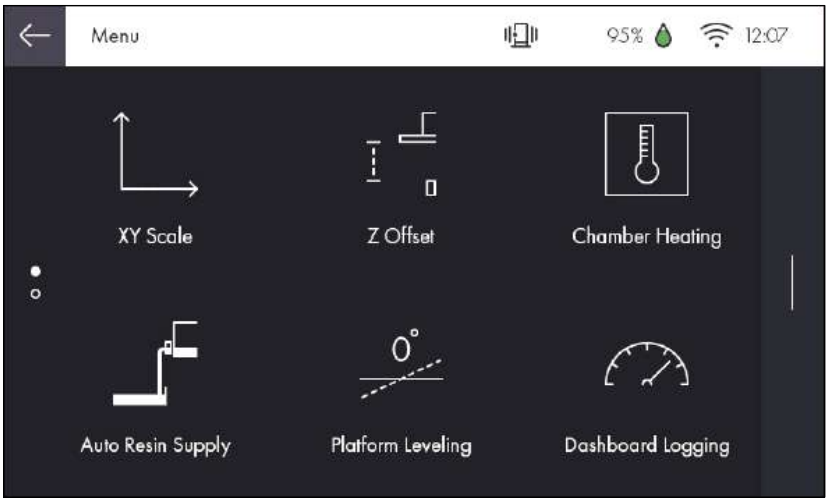
1 Press [Slide Menu Bar] from the Home screen.



2 Press [Setting] from the Menu screen



3 Press [XY Scale].



4 XY Scale screen where horizontal(X) and vertical(Y) scale can be adjusted is shown.

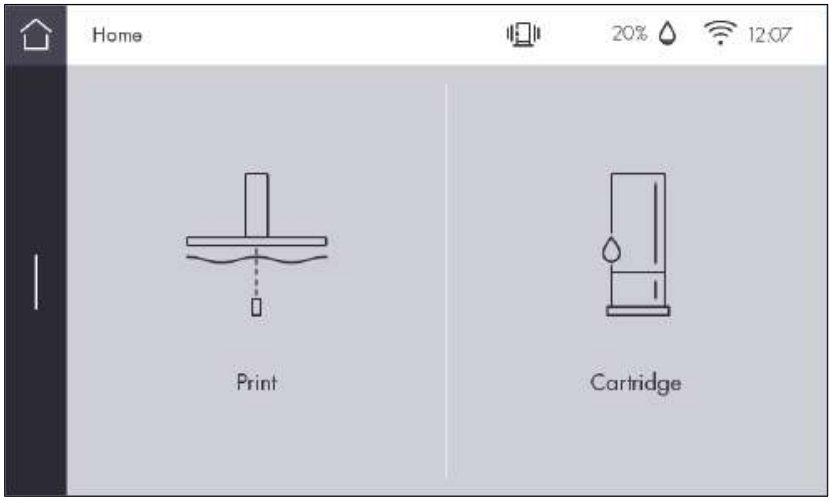
5 Change X/Y scale values by pressing [+] or [-] until they reach the target numbers. Adjustable range is 95.0~105.0% in 0.1% unit. Press [Save] when finished.

Z Offset

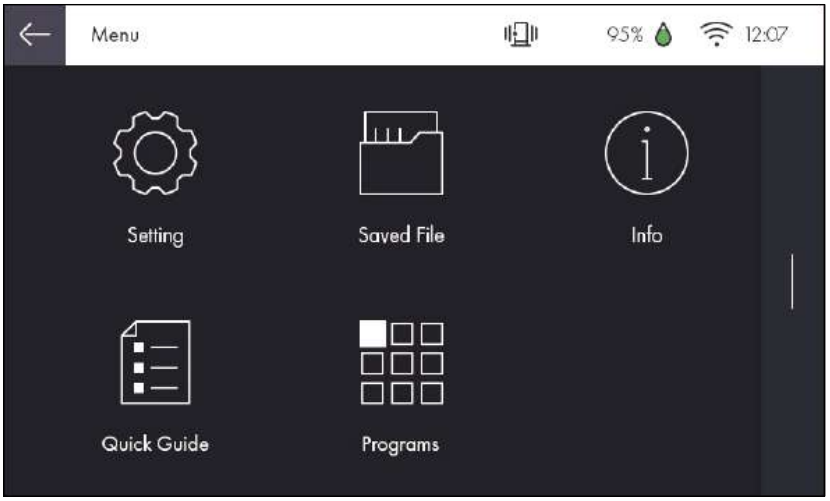
This function allows users to adjust the distance between platform and resin tank to change the thickness of the first layer of raft.

Change Z Offset value to [-] direction in case of printing failure caused by a drop of raft. On the other hand, change Z offset value to [+] value to increase raft thickness in case that raft is thicker than specified.

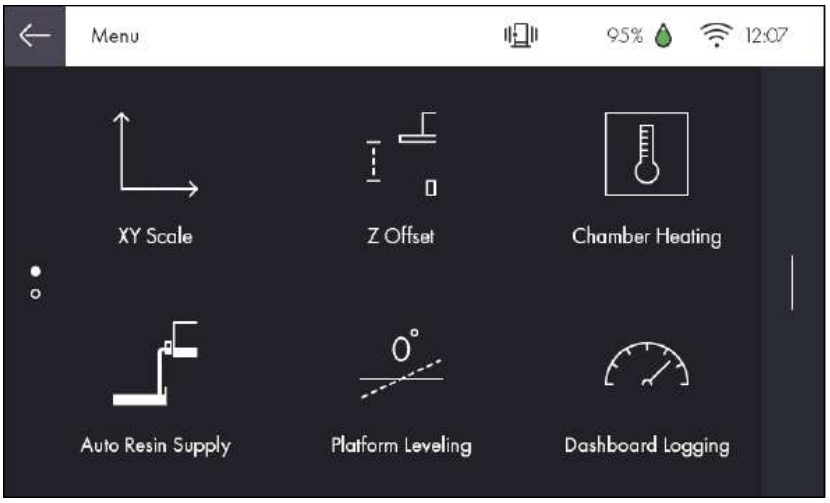
1 Press [Slide Menu Bar] from the Home screen.



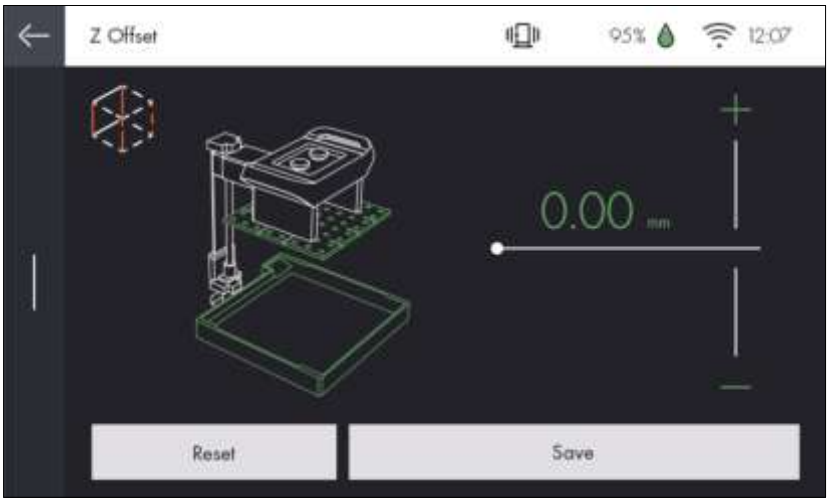
2 Press [Setting] from the Menu screen



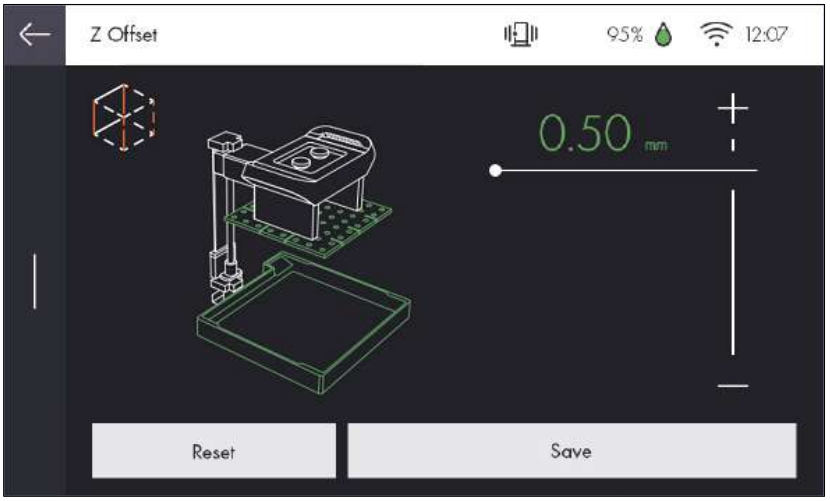
3 Press [Z Offset].



4 Z Offset screen is shown up.



5 Change a value by pressing [+] or [-] until it reaches the target number. Adjustable range is -0.05mm~+0.5mm in 0.05mm unit. Press [Save] when finished.

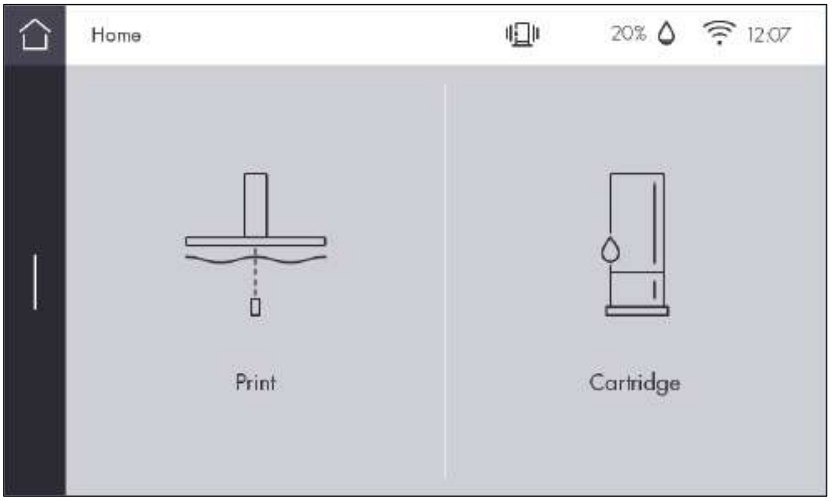


Chamber Heating

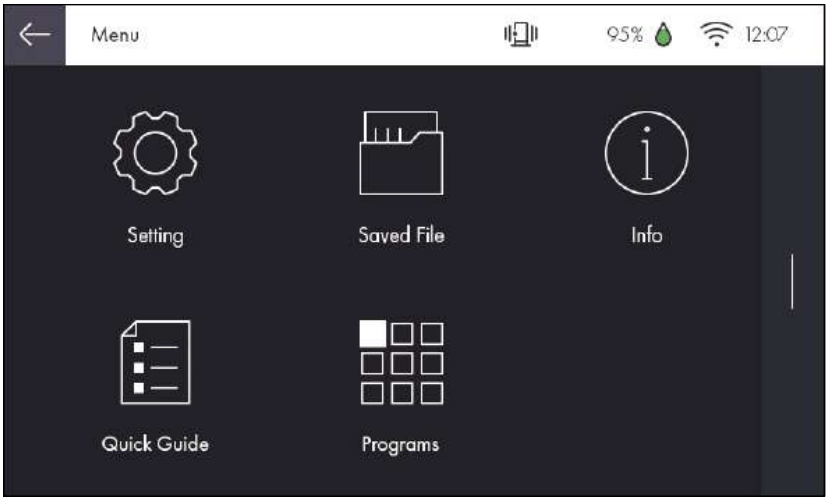
This function allows users to enable or disable chamber heater feature when 3rd party resin is used in Open Mode or heater needs to be turned ON or OFF in any circumstances necessary.

※ Temperature in the chamber is automatically controlled by heater in case of Sindoh's resin for the best printing quality. It is recommended that chamber heating is turned ON when Sindoh's resin is used.

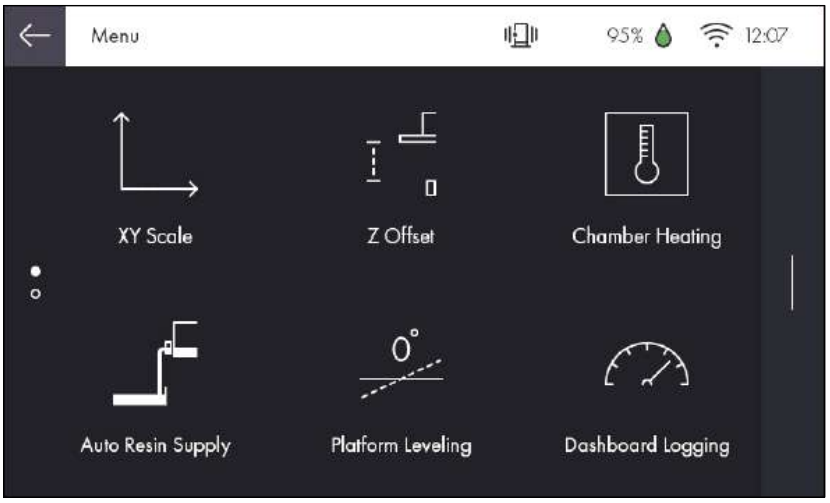
1 Press [Slide Menu Bar] from the Home screen.



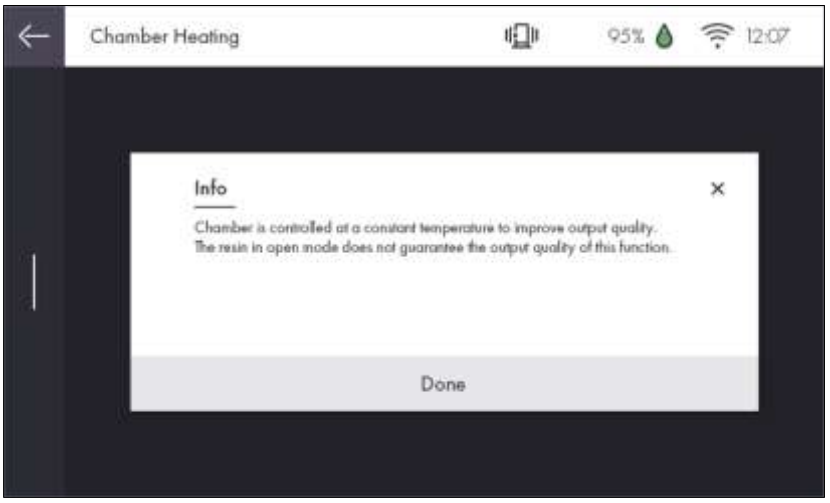
2 Press [Setting] from the Menu screen



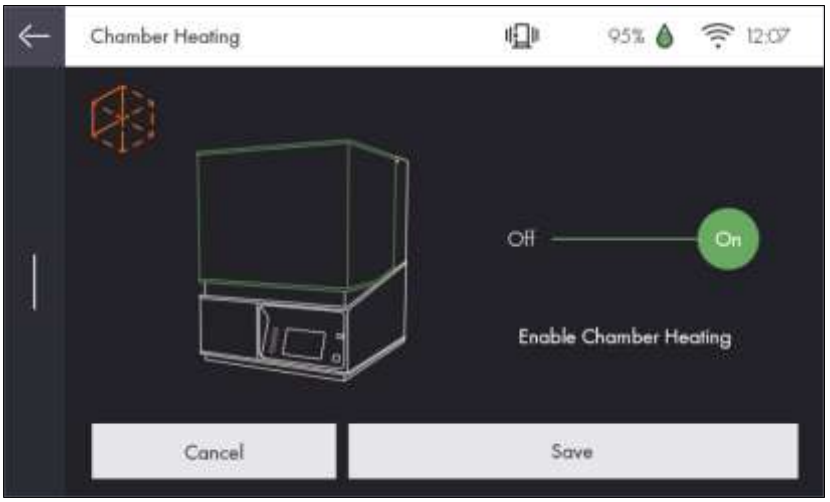
3 Press [Chamber Heating].



4 If you agree on the message of pop-up window, press [Done] to continue.



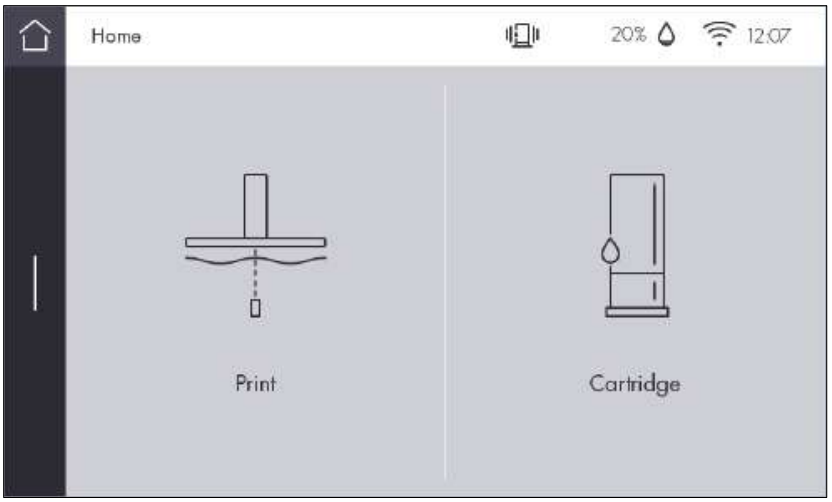
5 Select [On] or [Off], and press [Save] to finish.



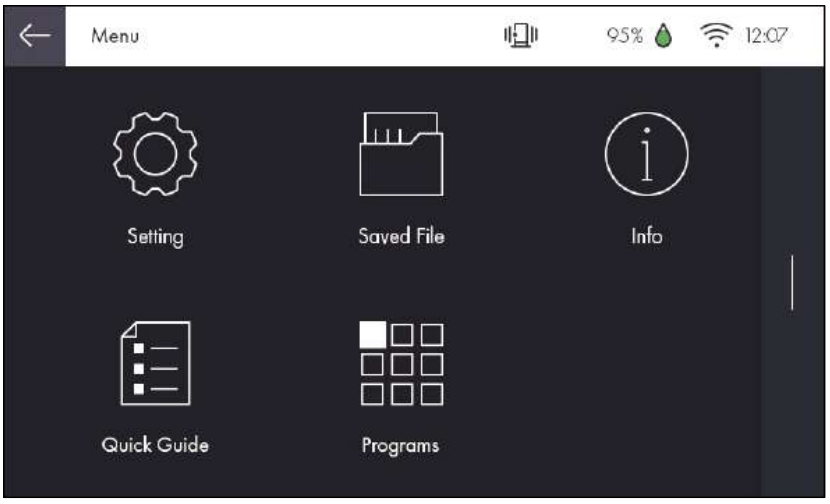
Resin Auto Supply

This function allows user to enable or disable resin auto supply features.

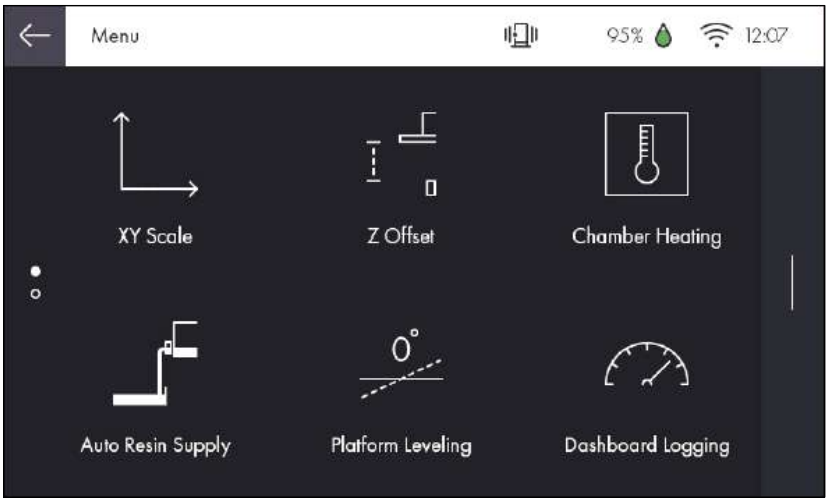
1 Press [Slide Menu Bar] from the Home screen.



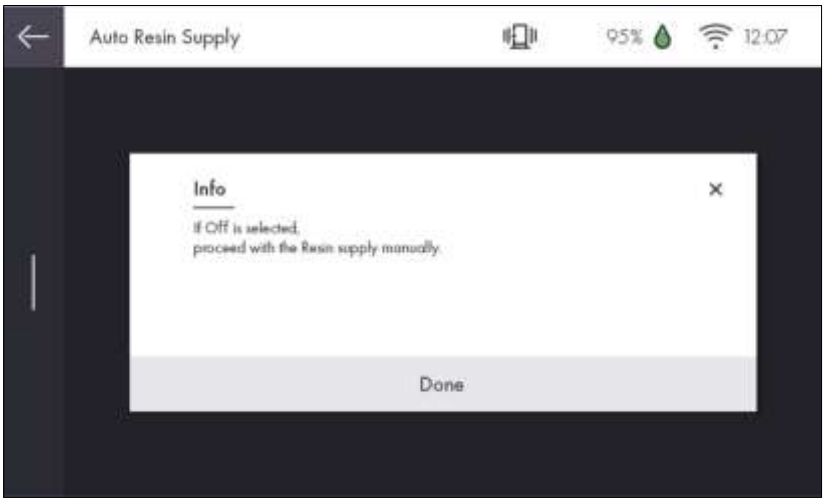
2 Press [Setting] from the Menu screen



3 Press [Auto Resin Supply].



4 If you agree on the message of pop-up window, press [Done] to continue.

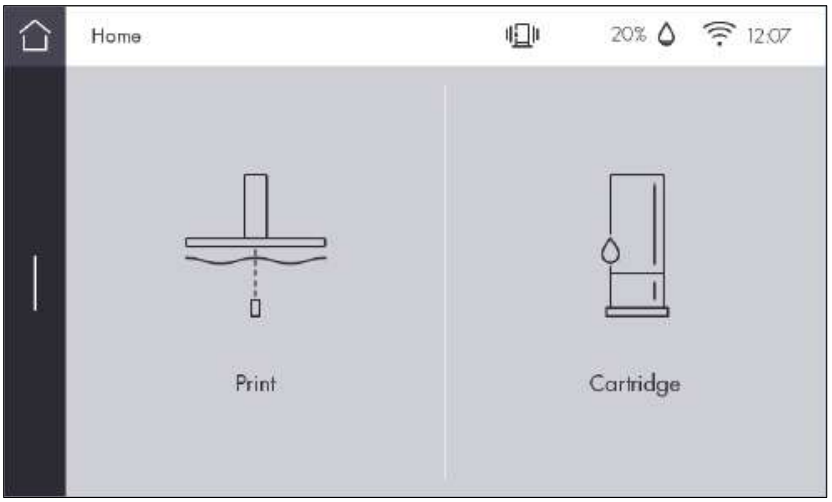


5 Select [On] or [Off], and press [Save] to finish.

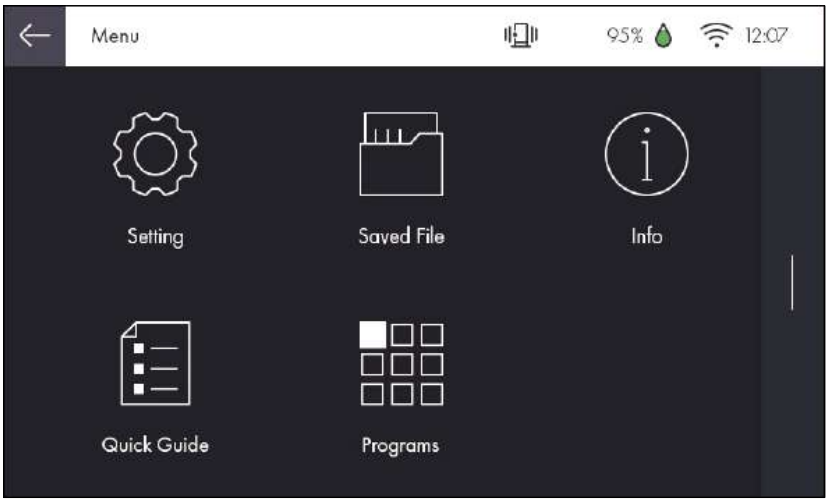
Platform Leveling

This function allows users to make an alignment of platform with resin tank

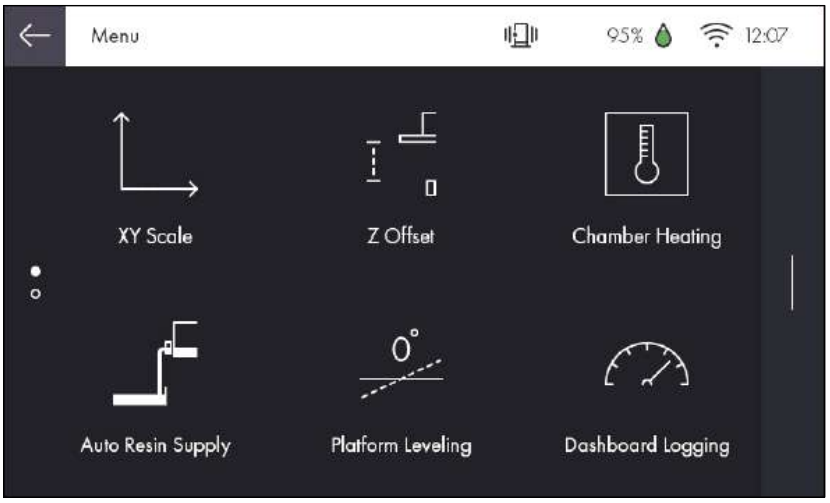
1 Press [Slide Menu Bar] from the Home screen.



2 Press [Setting] from the Menu screen

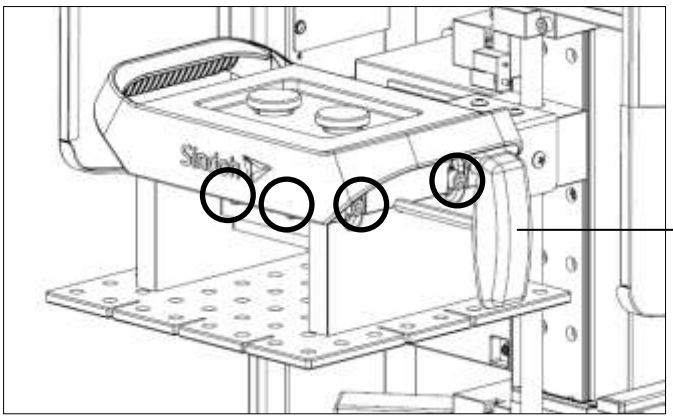


3 Press [Platform Leveling].



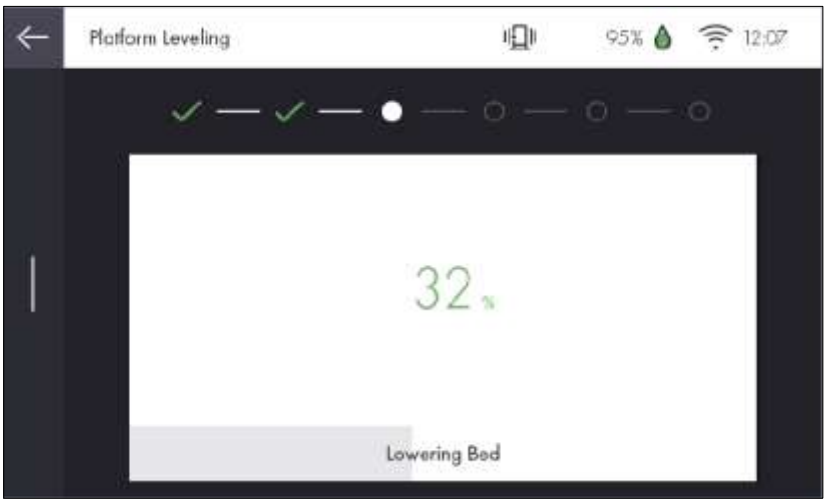
4 Remove all resin remaining in resin tank. If resin is not completely removed from the resin tank, leveling may be done incompletely. Refer to [Resin tank] of [5.Maintenance] for details of how to remove resin from the resin tank.

5 Loosen 6 platform locking screws using T-handle hexagon wrench, and press [Next].

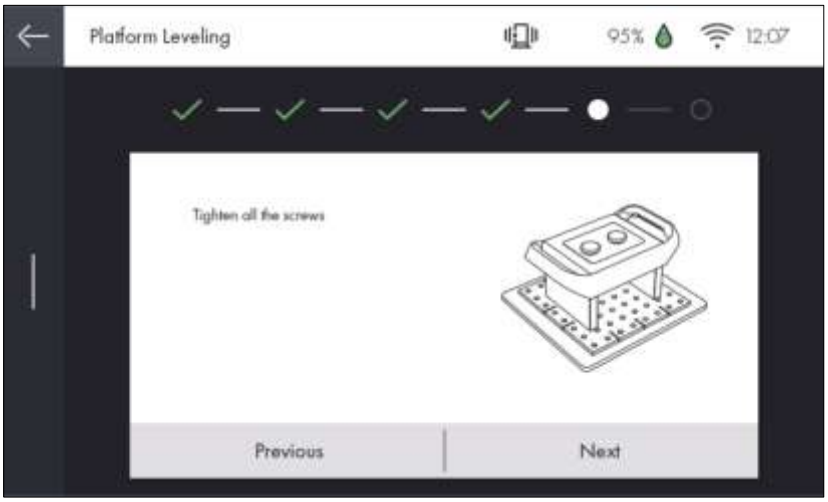


※ Do not completely remove screws from the platform and just “loose” them. If you try to remove screws from platform, they may be dropped into resin tank by accident.

6 Platform moves down to the lower limit position.



7 When platform lowering is complete, fasten back 6 platform locking screws using T-handle hexagon wrench, and press [Next].

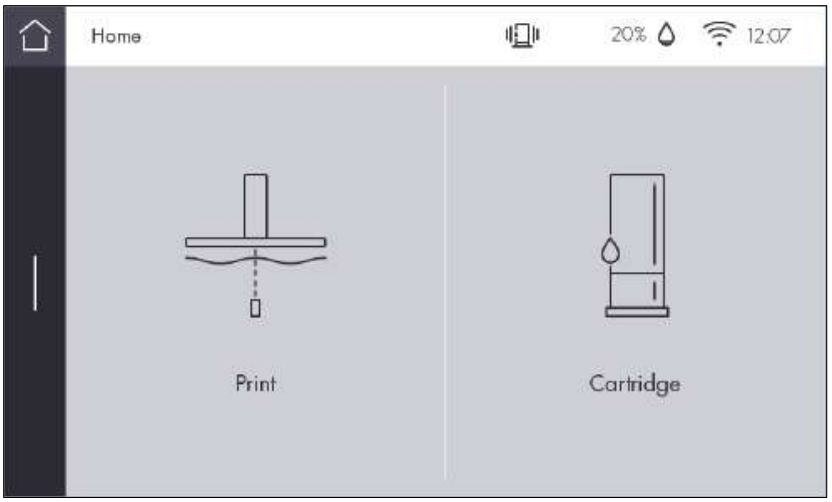


8 All leveling procedure is complete.

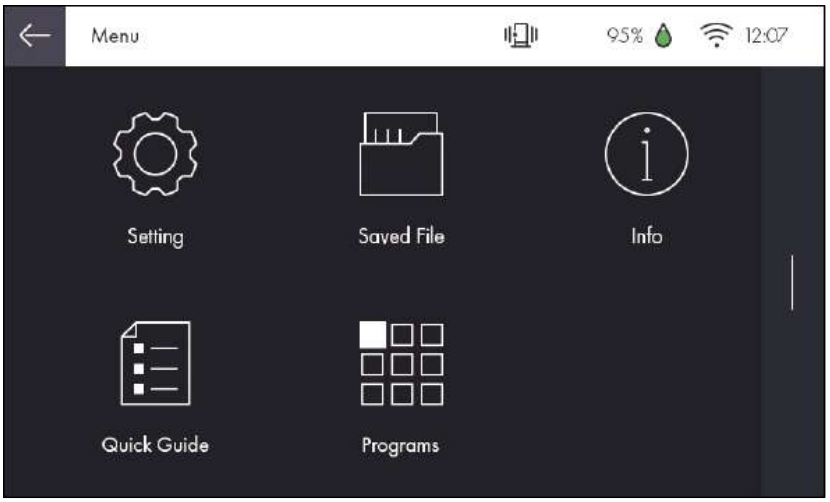
Dashboard Logging

This function let users to remotely check the status of device, and send management information by email.

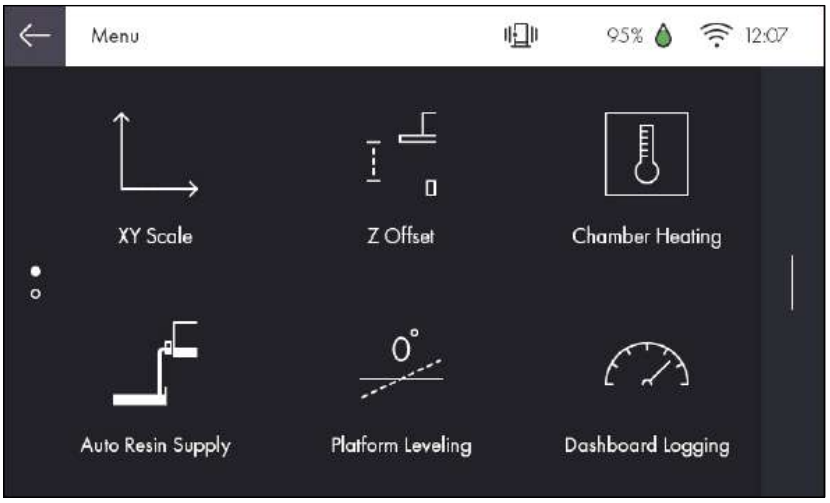
1 Press [Slide Menu Bar] from the Home screen.



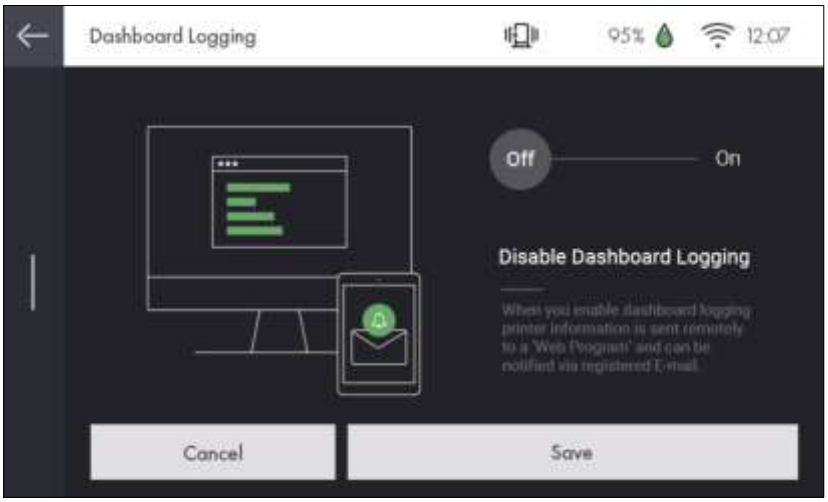
2 Press [Setting] from the Menu screen



3 Press [Dashboard Logging].



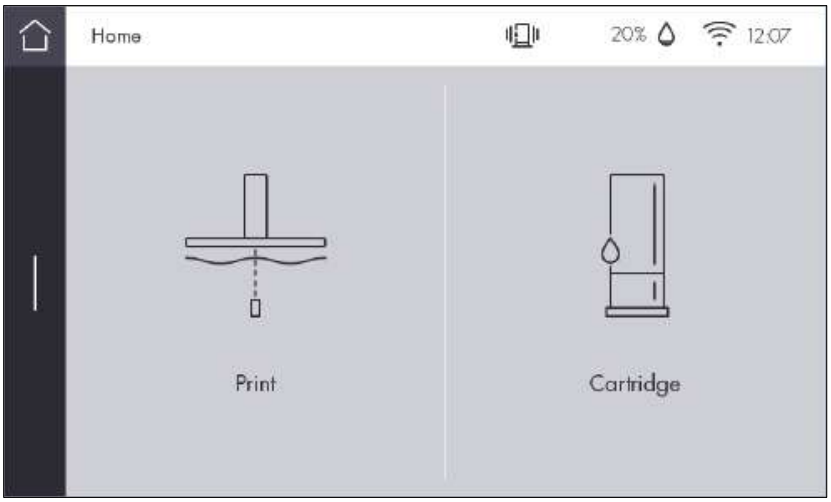
4 Select [On] or [Off], and press [Save] to finish.



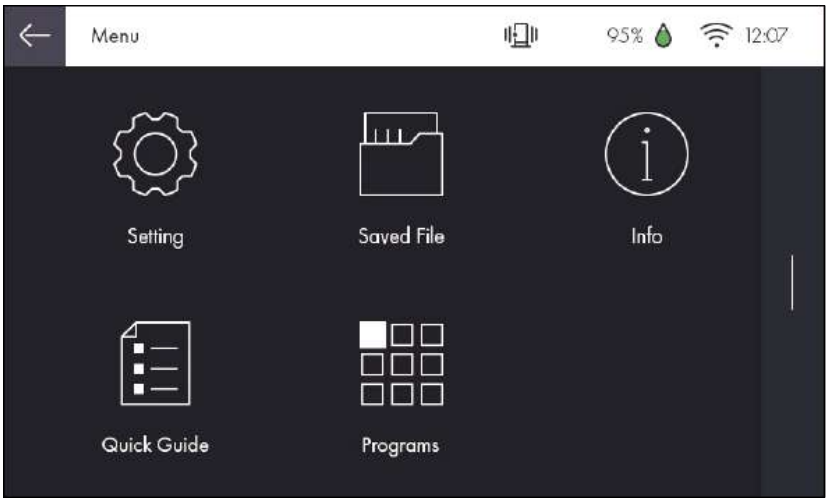
Network

This function let users to set up network configurations of the device. Both wired and wireless LAN can be configured in details.

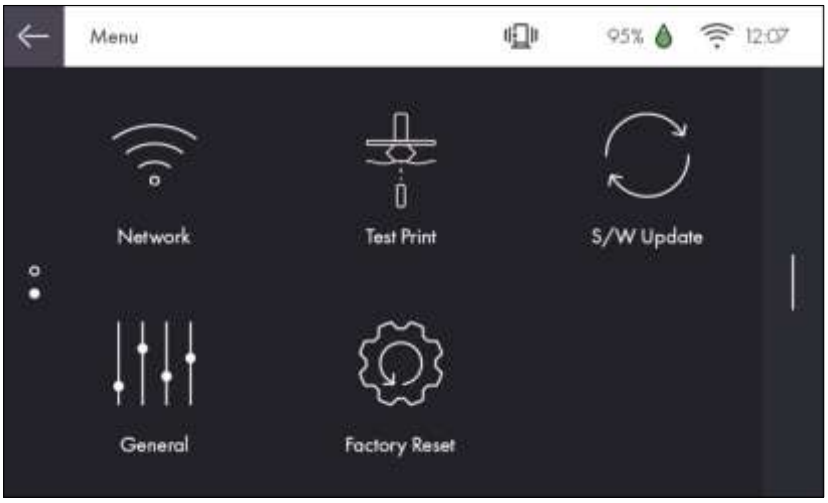
1 Press [Slide Menu Bar] from the Home screen.



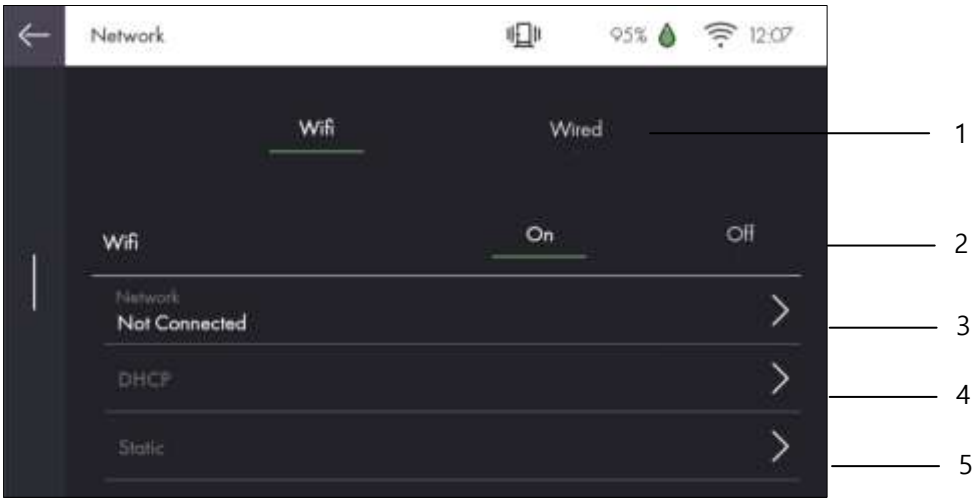
2 Press [Setting] from the Menu screen



3 Swipe the screen upward, and press [Network].

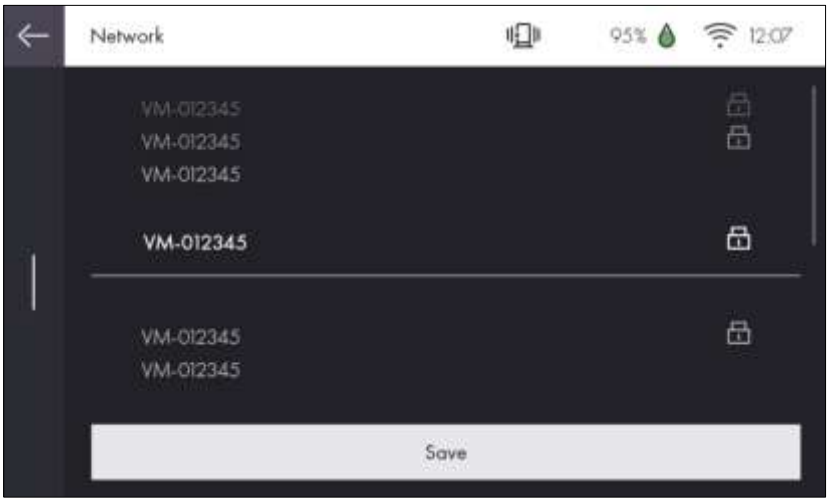


4 Network setup screen is shown up.

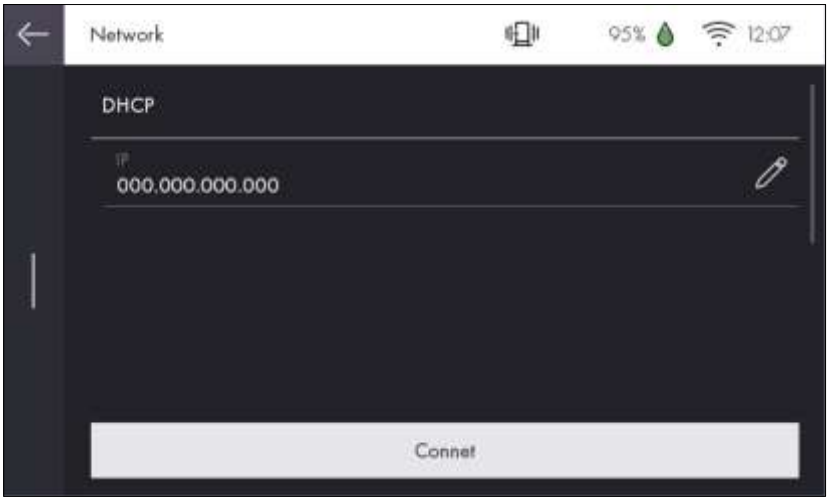


No.	Name	Description
1	**Network Type**	Select Wifi or wired LAN.
2	**ON/OFF**	Turn ON or OFF Wifi.
3	**SSID**	Select SSID or enter SSID manually if it is hidden.
4	**DHCP**	Allocate IP address automatically
5	**Static**	Enter static IP address and related parameters.

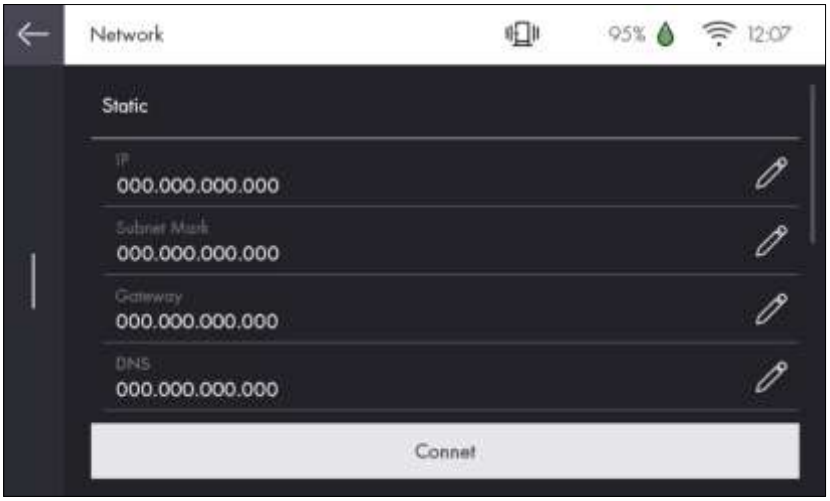
5 List of SSIDs is displayed. Select a SSID you want to connect, and press [Save] to store the setting. If selected SSID requires password, enter it.



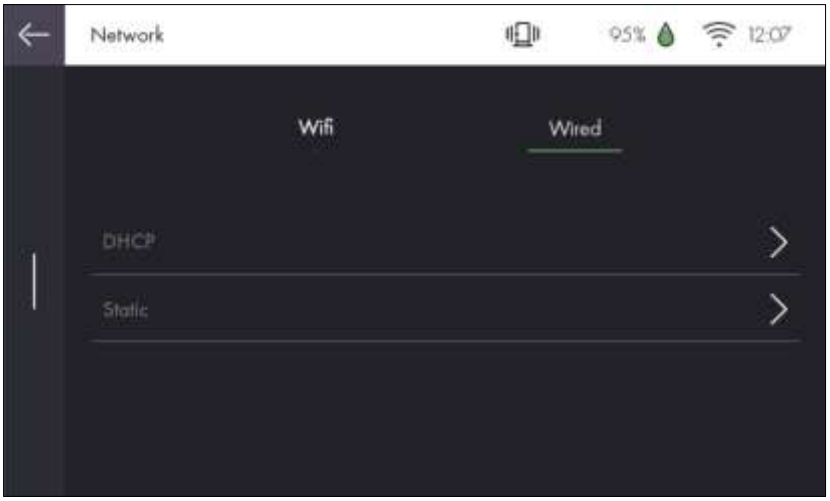
6 Press [DHCP] to see an allocated IP address after getting connected.



7 Press [Static] if a fixed IP address is required. Press pen icon[ ] to enter IP address manually.



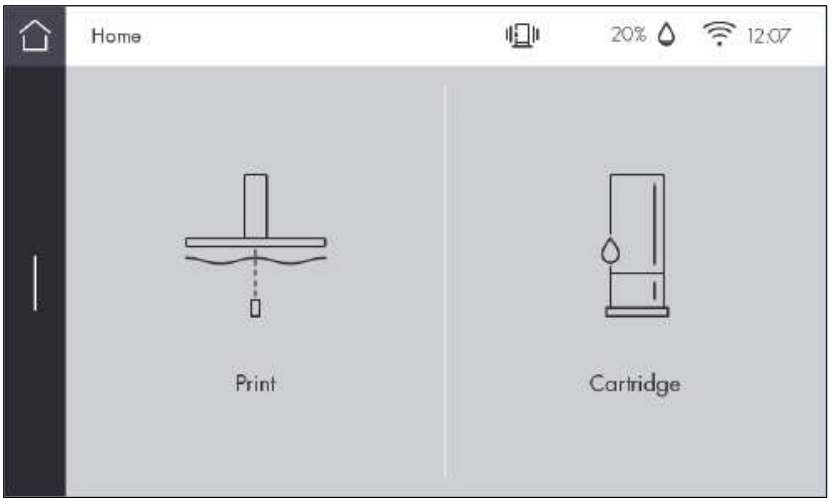
8 For wired LAN, repeat the same procedure as the case of wireless if required.



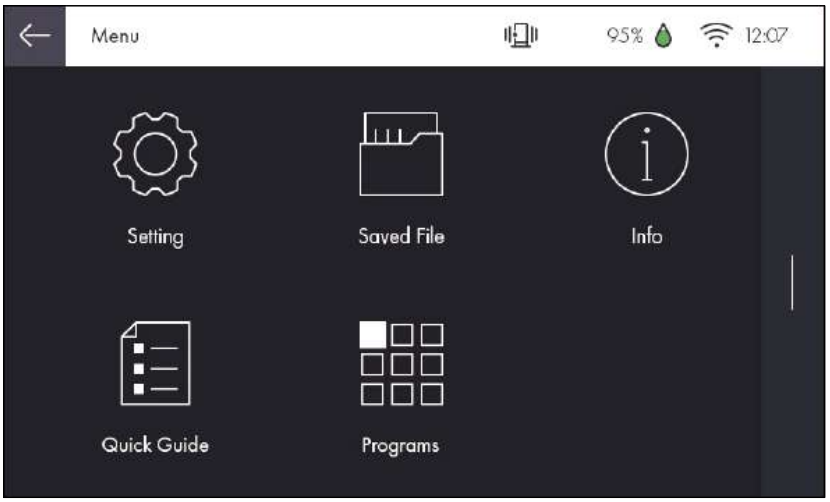
Test Print

This function allows users to print a sample model already saved in the internal memory of printer.

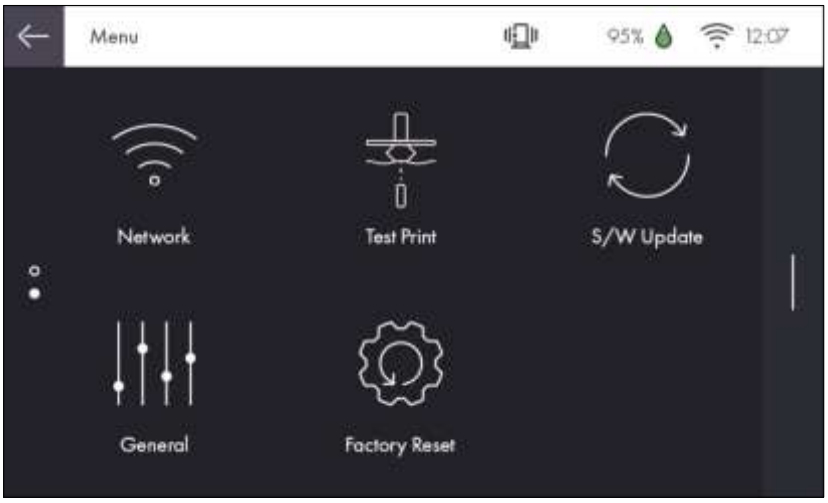
1 Press [Slide Menu Bar] from the Home screen.



2 Press [Setting] from the Menu screen

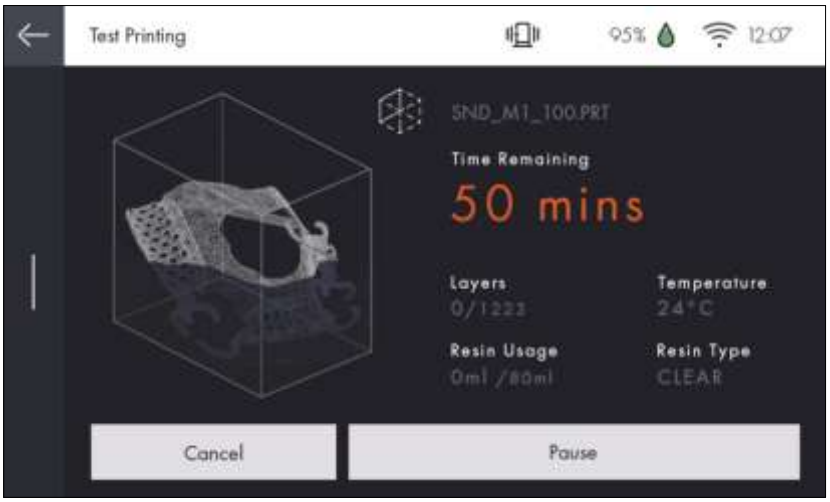


3 Swipe the screen upward, and press [Test Print].



4 List of sample model files is shown up. Select a file to be printed.

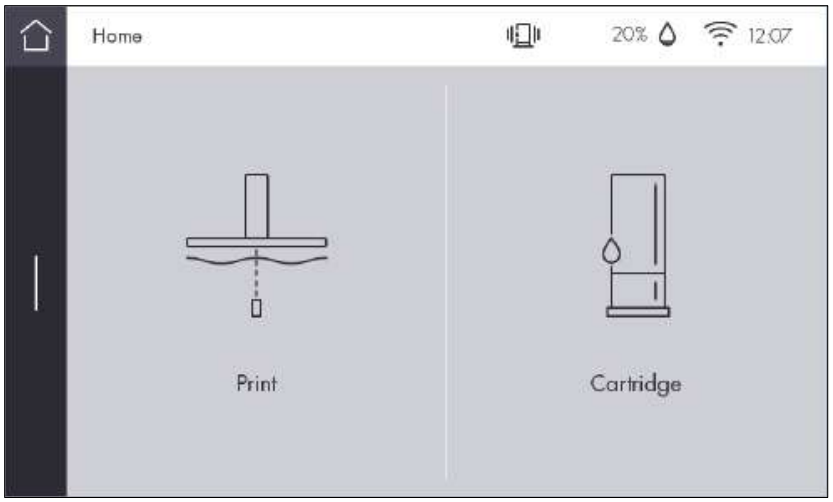
5 Printing gets started.



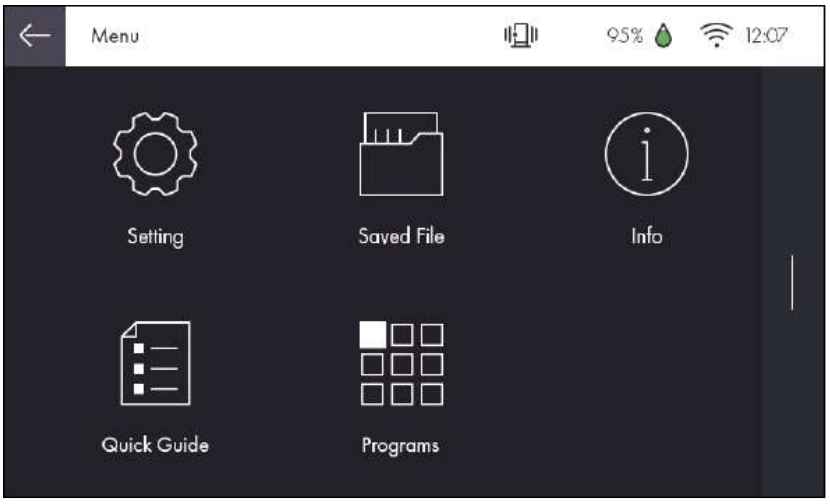
S/W Update

This function keeps S/W of the device up to date. It works only when network connection is available.

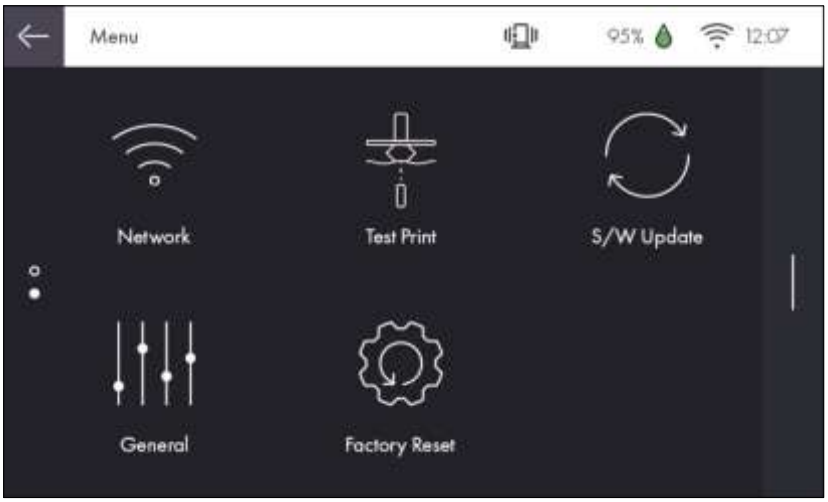
1 Press [Slide Menu Bar] from the Home screen.



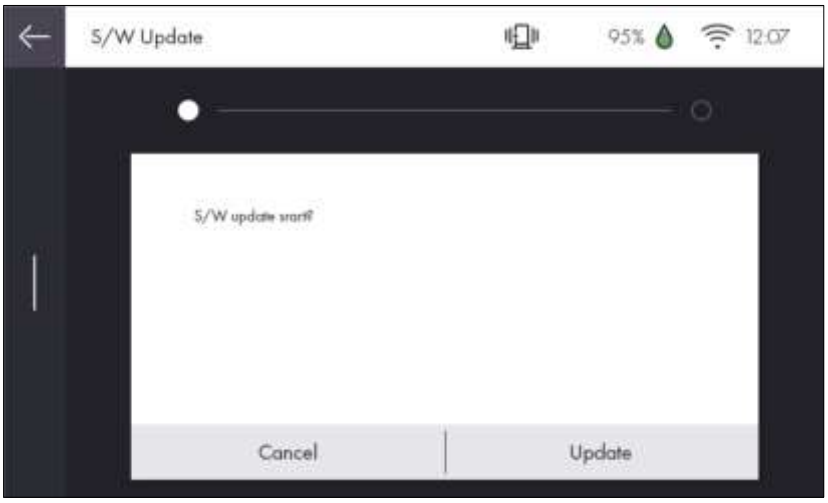
2 Press [Setting] from the Menu screen



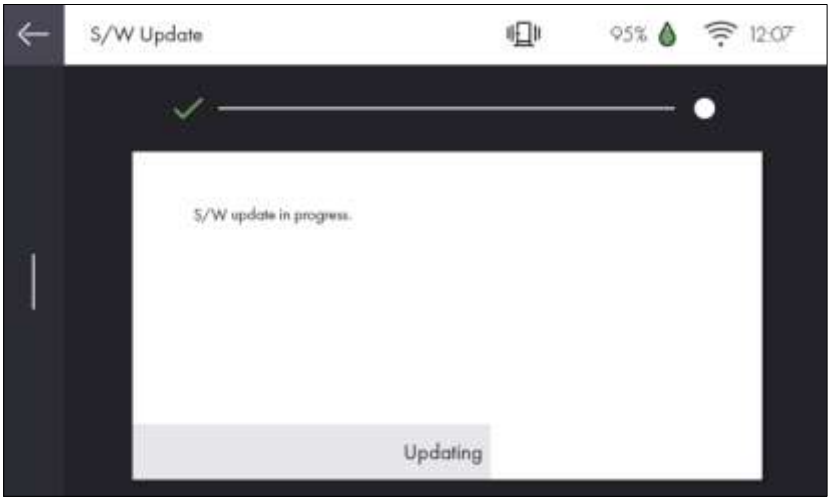
3 Swipe the screen upward, and press [S/W Update].



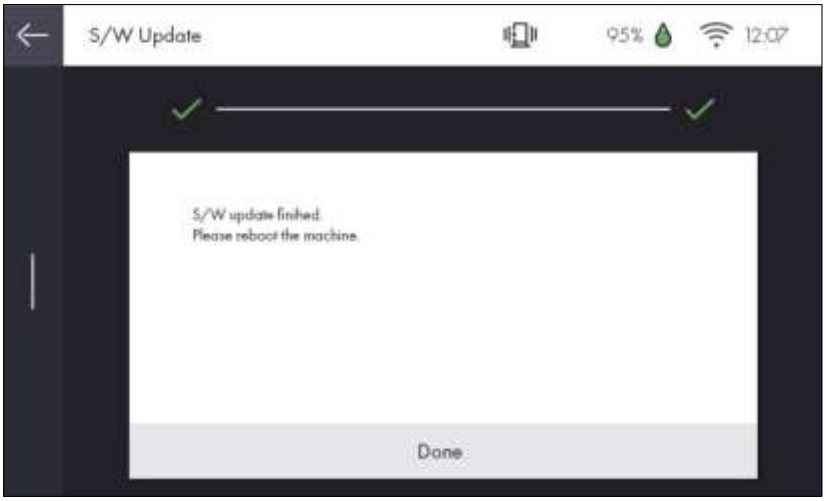
4 Press [Update] if you wish to proceed.



5 S/W update is in progress.



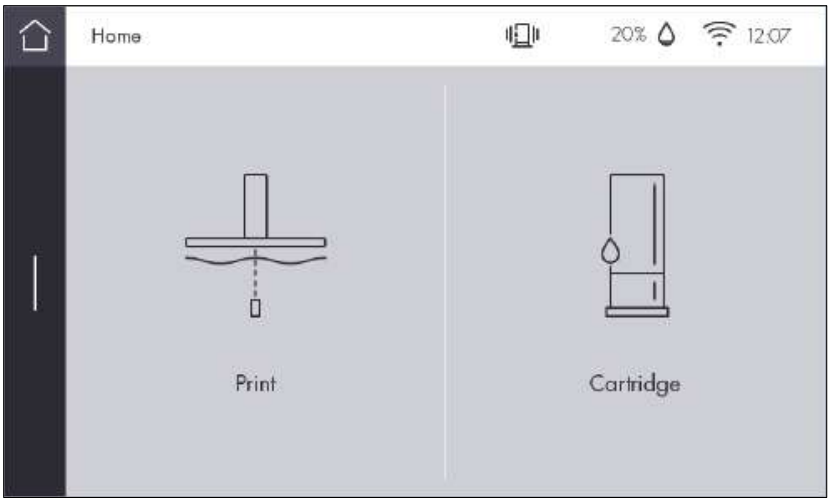
6 When S/W update is finished, press [Done] to reboot the device.



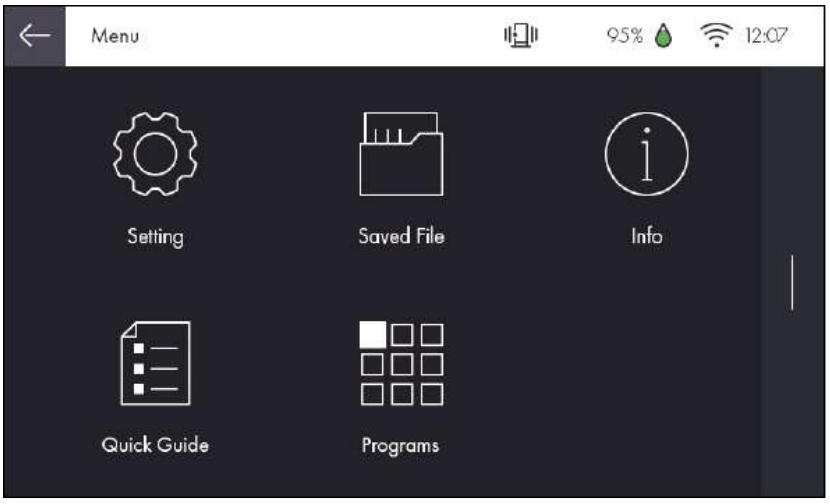
General

This function allows users to change general settings.

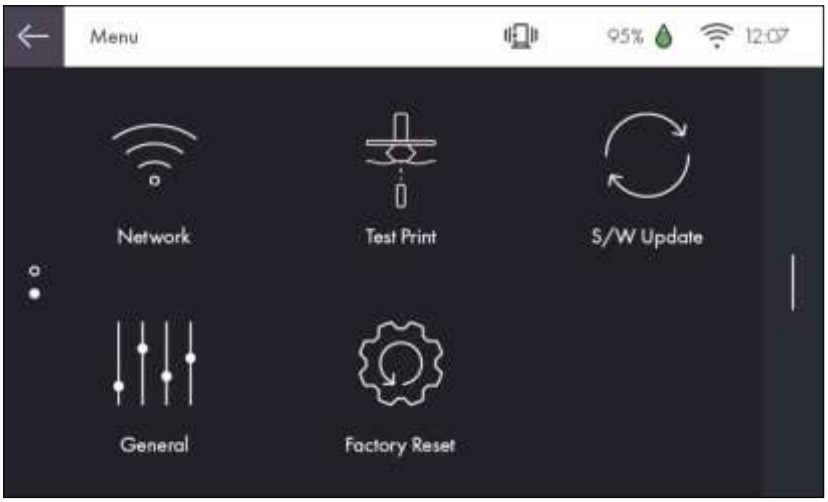
1 Press [Slide Menu Bar] from the Home screen.



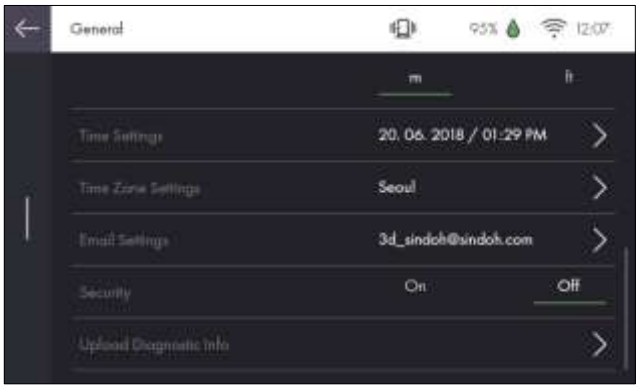
2 Press [Setting] from the Menu screen



3 Swipe the screen upward, and press [General].



4 List of general items appears. Select an item to change.



▣ Language

System language of the device can be chosen. Select a language using [<] and [>].

▣ Power Saving

Time delay before entering power saving mode can be set. Adjustable range is 0~120 minutes in 5 minutes unit. Change value using [<] and [>].

- 0 minute: Power saving mode is disabled.
- 5~120 minutes: Time delay before entering power saving mode.

▣ Beep Sound

You can turn ON or OFF the beep sound of the device.

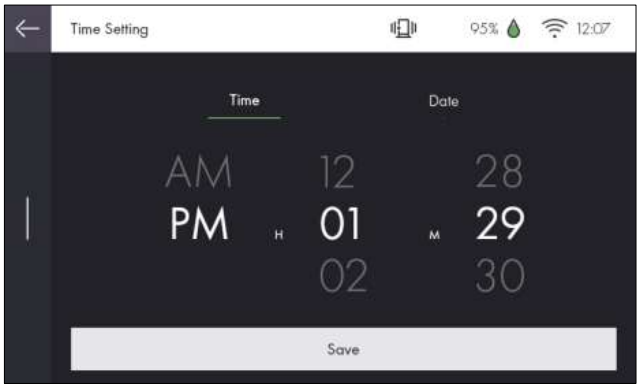
▣ Units

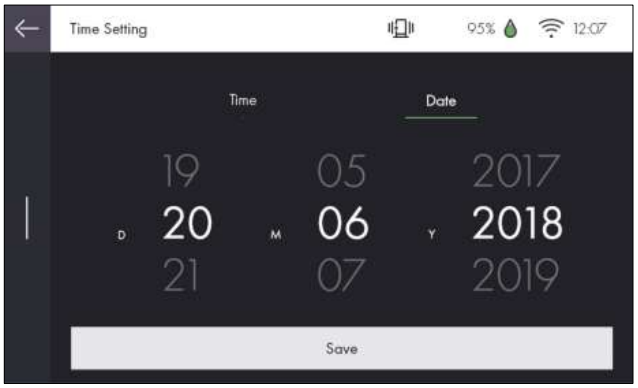
Units of temperature and length can be changed.

- Temperature: Select between °C and °F.
- Length : Select between meter(m) and inch(ft).

▣ Time Settings

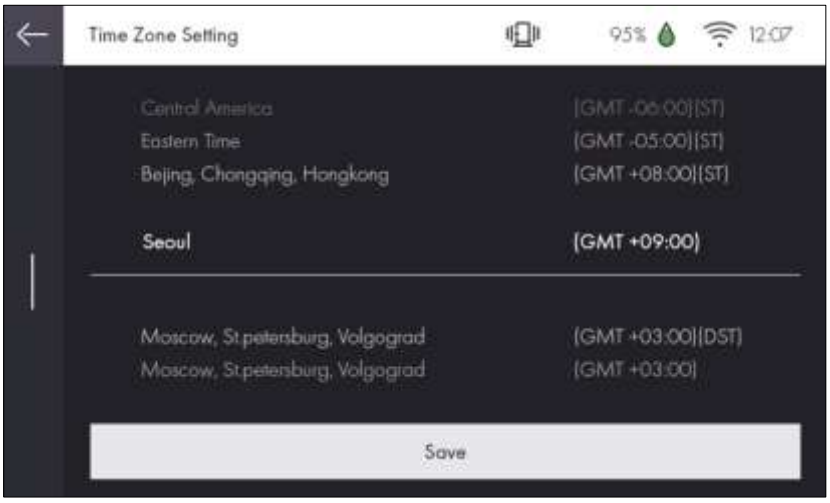
The current time and date of the device can be shown, and can be changed manually if they are incorrect. Press [>] to change the settings.





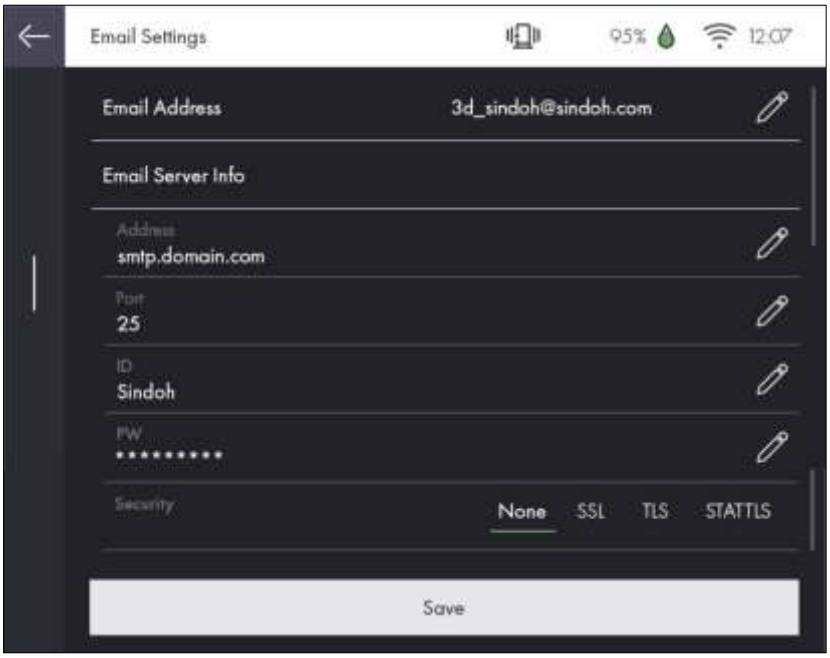
▣ Time Zone Settings

The current time zone setting of the device can be shown. Press [>] to change, and swipe the screen up and down to choose the new time zone.



▣ Email Settings

Email address, which a photo capturing the printing status will be sent to, can be specified.



Title	Descriptions
Email Address	Email address which a photo capturing the printing status will be sent to.
Address	SMTP server address of email service.
Port	SMTP server port number. Normally the port number 25 is used, and sometimes 465 or 587 is used depending on security setting. For details, please contact the administrator of email server or email service provider.
ID	SMTP server login ID - Enter the ID for your email account. - Depending on the service provider, a full email address may be requested. For details, please contact the administrator of email server or email service provider.
PW	SMTP server login password - Enter the password for your email account.
Security	Security method for SMTP server. - The default value is [None]. For further details, contact your server hosting company or mail service provider.

Inquire your email service administrator or service provider for detailed information of the input information on each category. Especially for SMTP server login ID, it may be needed to enter the entire email address which includes the domain name.

This setting is for the SMTP(Simple Mail Transfer Protocol) server to be used for sending emails. The SMTP setting may have to be enabled depending on the system.

To check the detailed setting values, please refer to the setup information from your email service provider. For the set up to use the outgoing email service, please find information by internet search or your email service provider's instructions.

A certain amount of time may be required after setting up SMTP service before using. For more details, please inquire your email provider for the service policies.

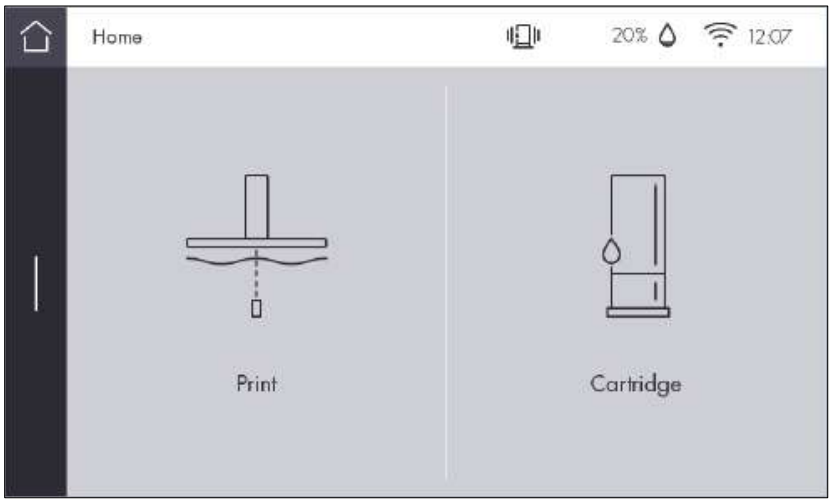
▣ Security

This is a feature to set up security of 3D printer.

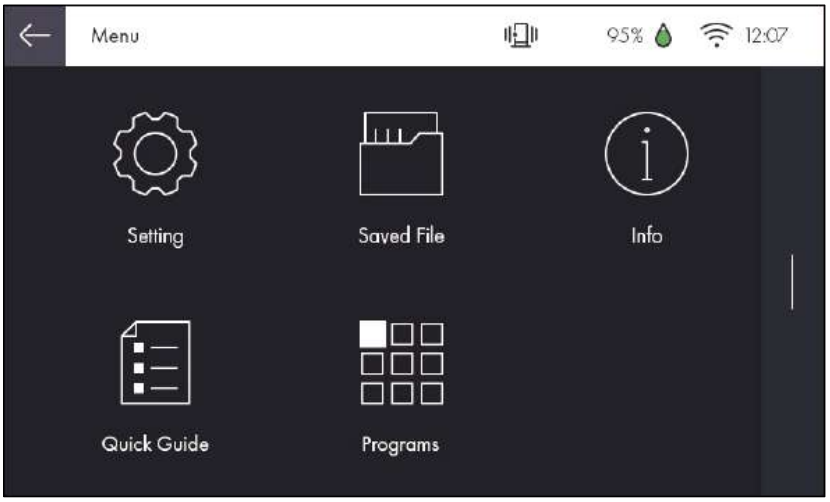
1.4 Saved Files

Saved Files

1 Press [Slide Menu Bar] from the Home screen.



2 Press [Saved Files] from the Menu screen

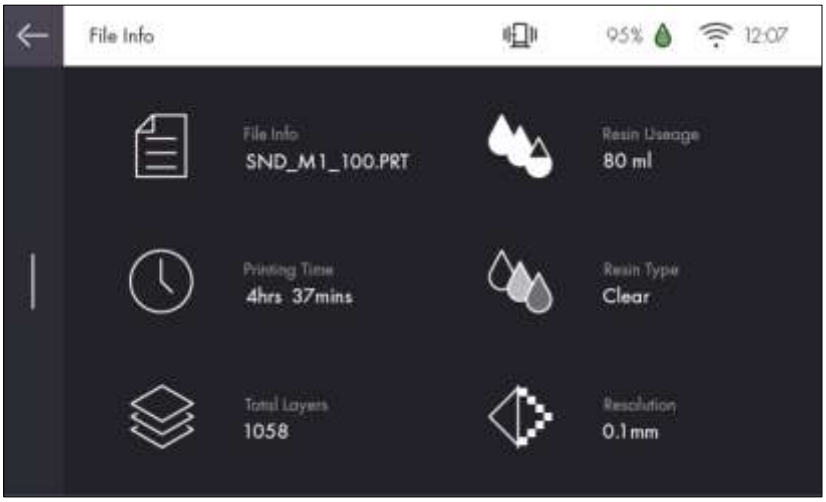


3 List of files existing in printer's internal memory is shown.

No.	Name	Description
1	**Info**	Displays detailed information of file
2	**Delete**	Deletes a file from the internal memory of printer
3	**Print**	Starts printing a selected file. Printing gets started.

▣ Info

It shows details of file such as ile name, resin type, how much resin is required to complete printing, printing time, number of total layers, and z-direction resolution.

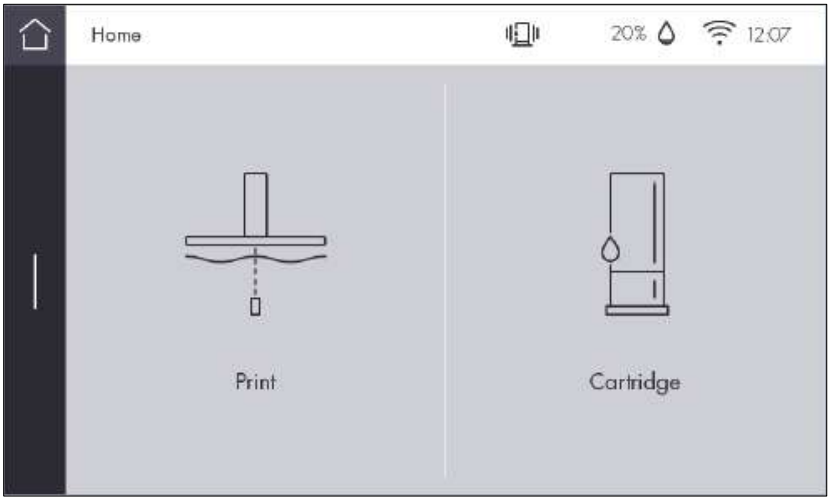


1.5 Info

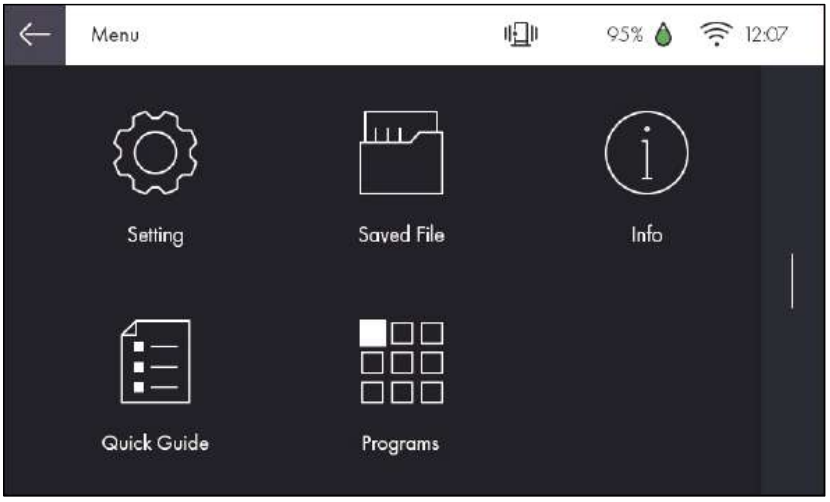
Info	Statistics
	History

This allows users to check detailed information about the device, and to set the name of the device and administrator password.

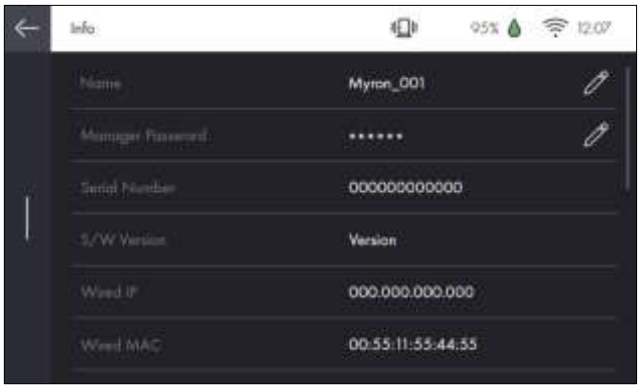
1 Press [Slide Menu Bar] from the Home screen.



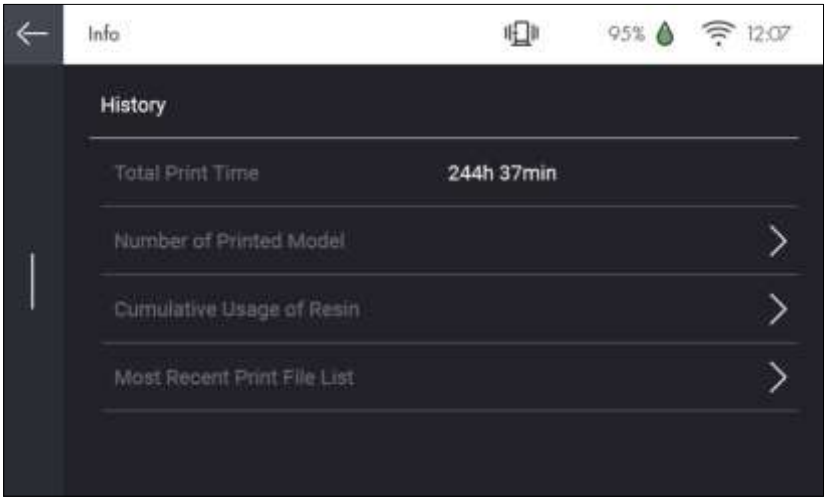
2 Press [Info] from the Menu screen.



3 In Info screen, it is possible to set the name of the device and administrator password, and to see the other detailed information about the device. For history of device usage, press [History].



4 Statistical information regarding machine usage is shown. For details, press [>].

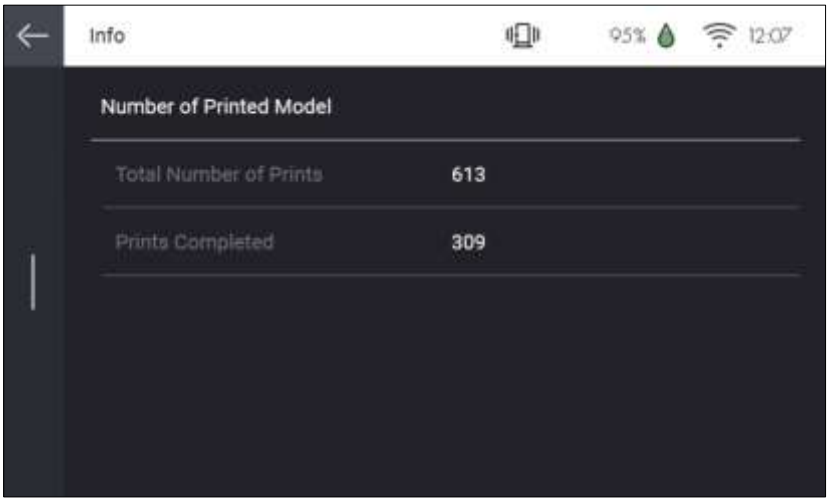


▣ **Total Print Time**

Total running time of the device by now is displayed.

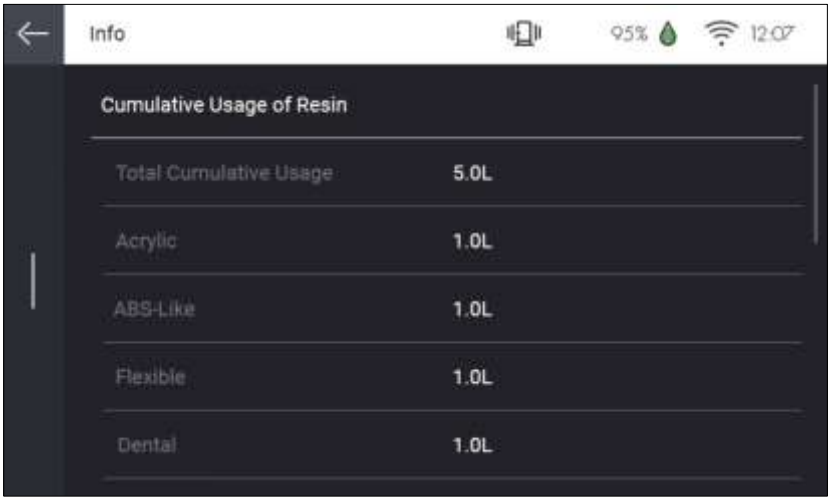
▣ **Number of Printed Model**

Total number of print jobs and number of print jobs which are successfully finished are displayed.



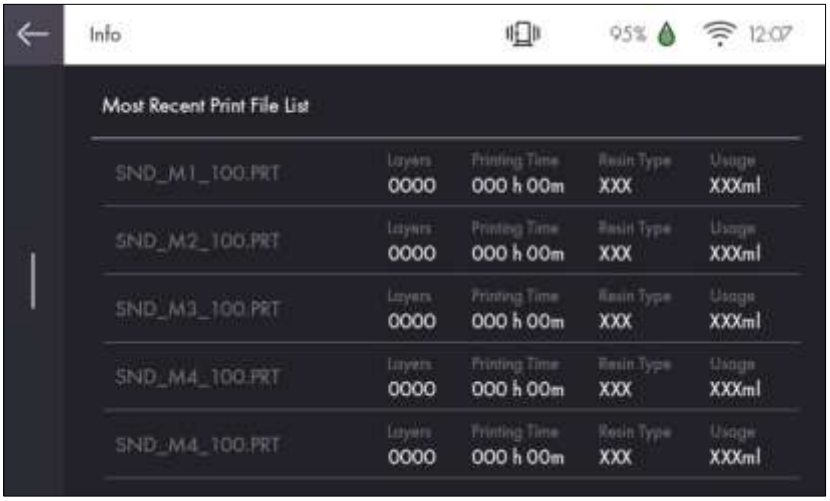
▣ Cumulative Usage - Resin

Total cumulative amount of resin is displayed, and usage of each individual resins is displayed too.



▣ Most Recent Print File List

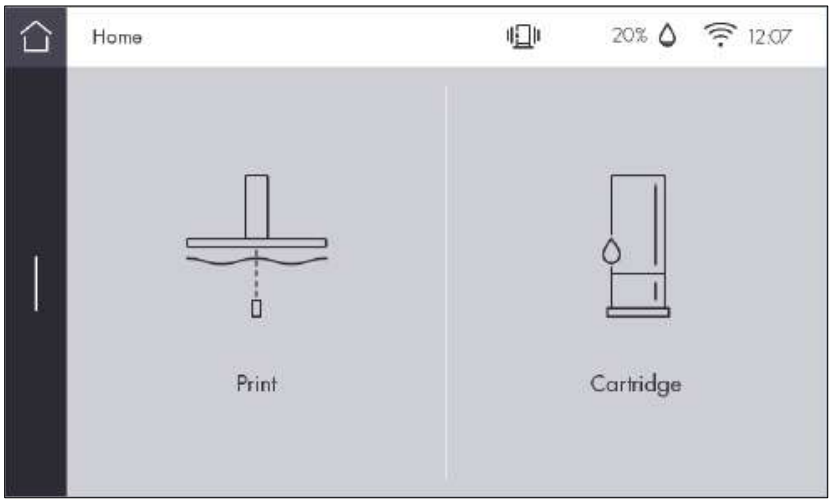
List of files being printed most recently is displayed.



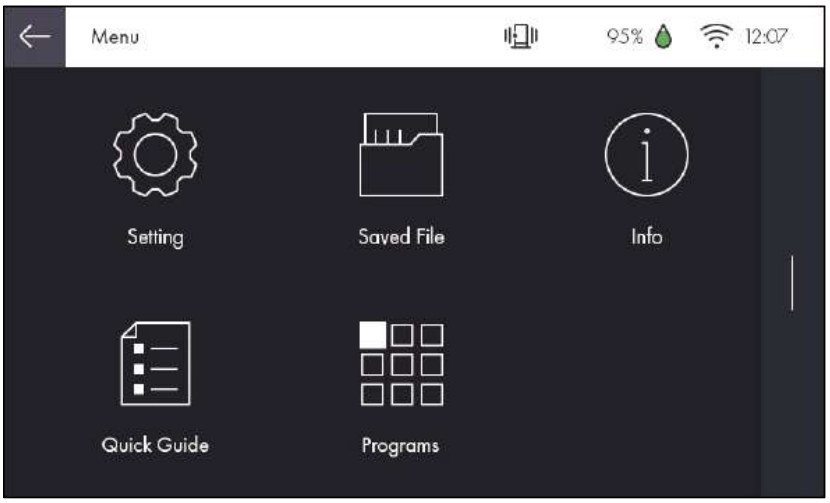
1.6 Quick Guide

Quick Guide

1 Press [Slide Menu Bar] from the Home screen.



2 Press [Quick Guide] from the Menu screen.

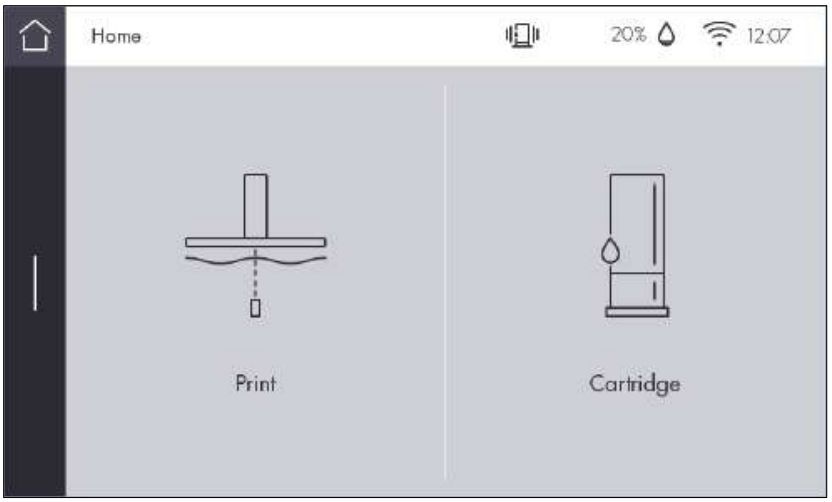


1.7 Programs

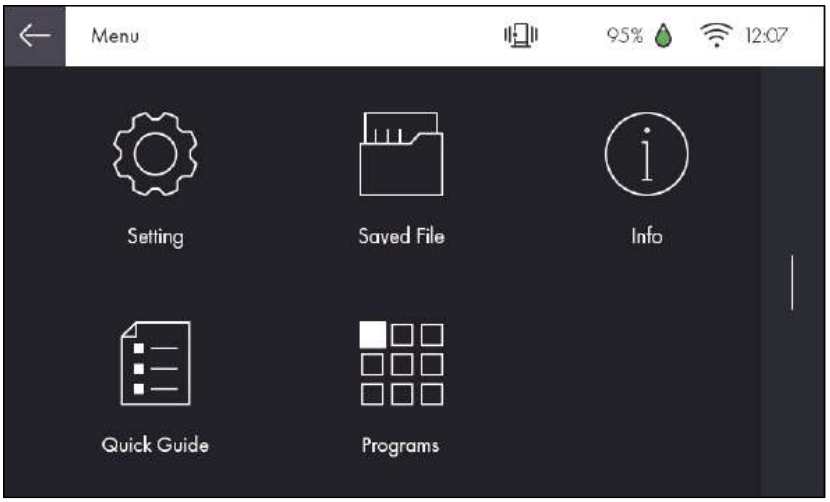
Programs

This feature allows users to install add-in SW such as web browser, etc, and make shortcuts for frequently used functions so that you can access them very quickly.

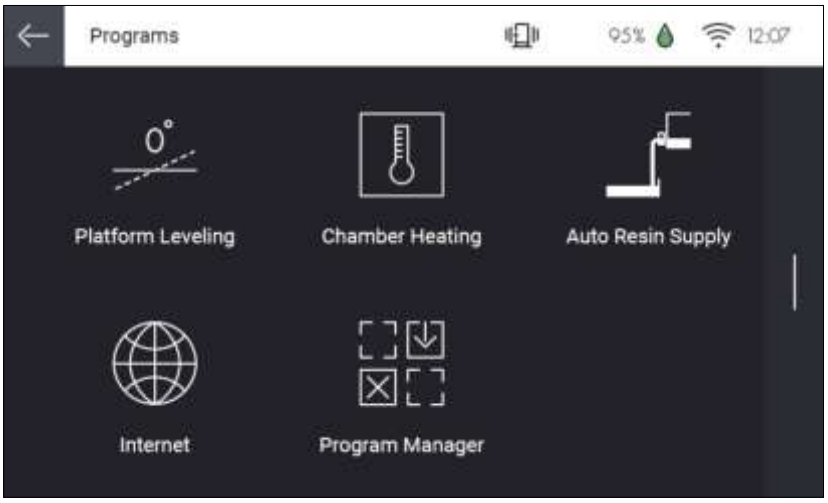
1 Press [Slide Menu Bar] from the Home screen.



2 Press [Programs] from the Menu screen.

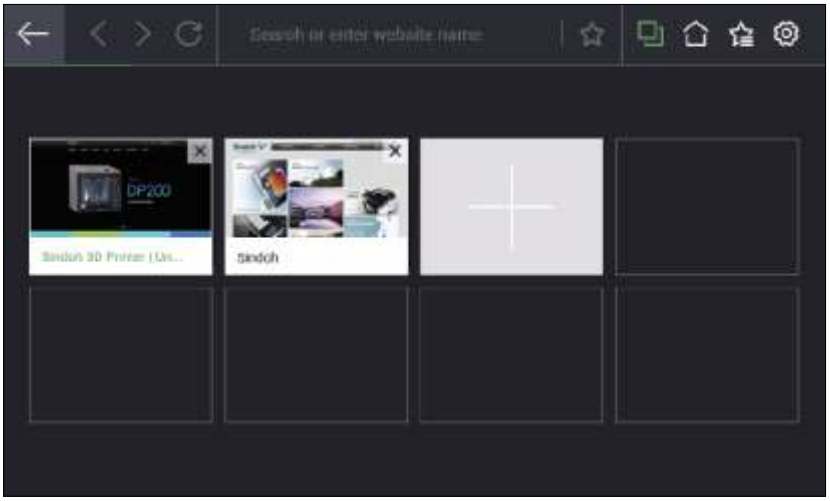


3 Press [Programs] from the Menu screen.



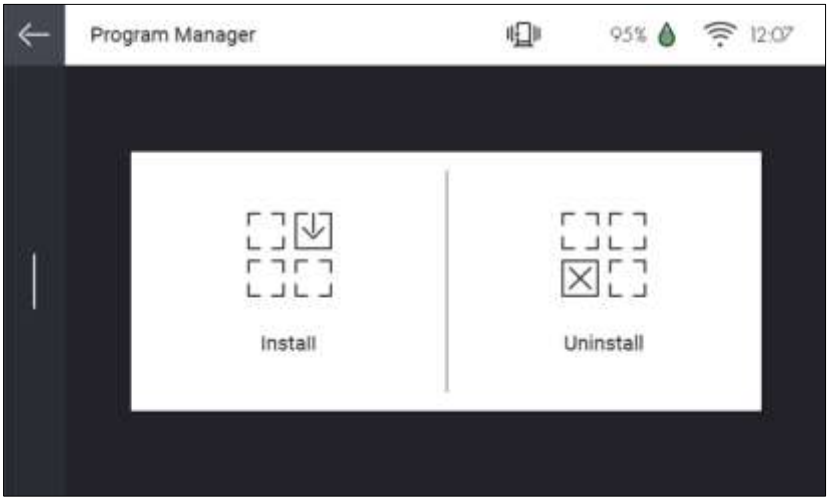
▣ **Internet**

You can access the internet using build-in web browser.



▣ **Program Manager**

You can install or uninstall add-In S/W.



▣ Install / Uninstall

List of add S/W is shown. Press [⬇] to install, or [☒] to uninstall.

A1 Series
USER MANUAL

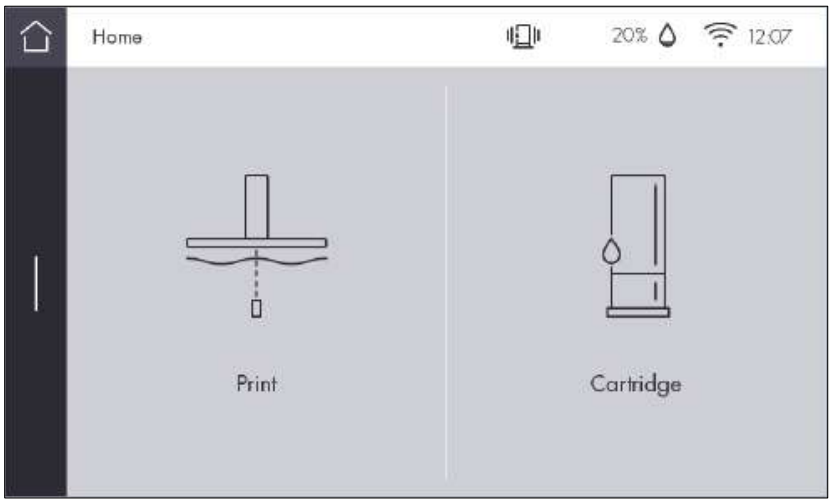
Printing

3

1. Printing

User can start printing via USB flash drive, USB cable, or over the network.

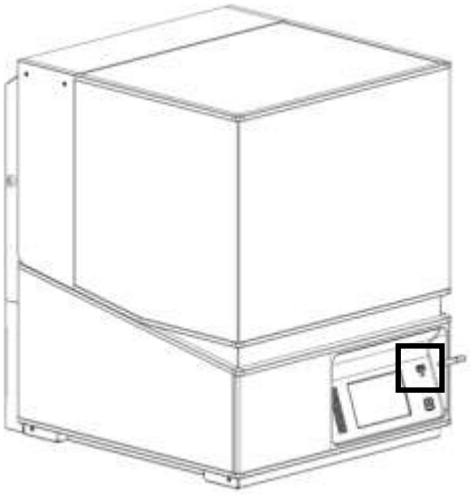
The following Home screen on the device means it is ready to start print.

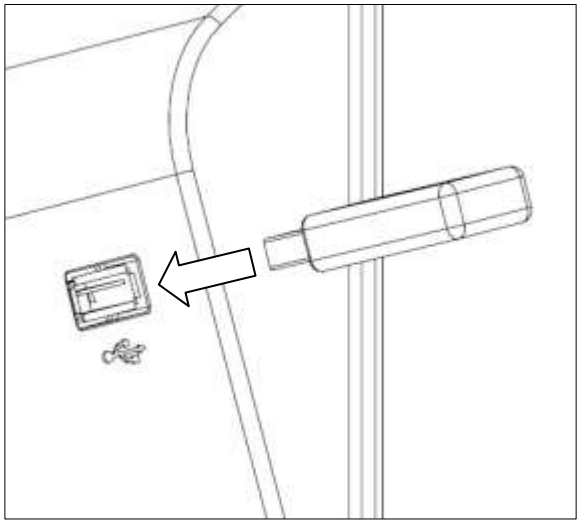


1.1 Printing from USB Flash Drive

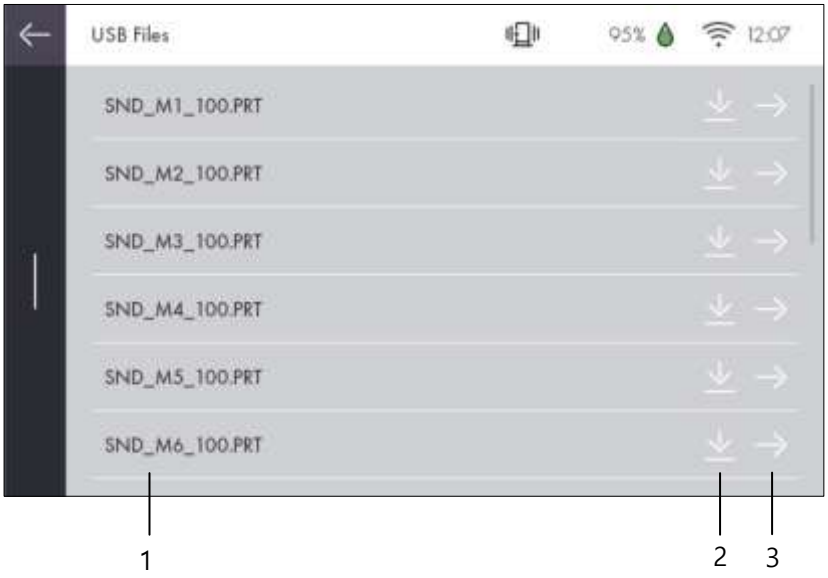
1 Connecting USB flash drive into the device.

In order to print using USB flash drive, insert the flash drive into USB port.





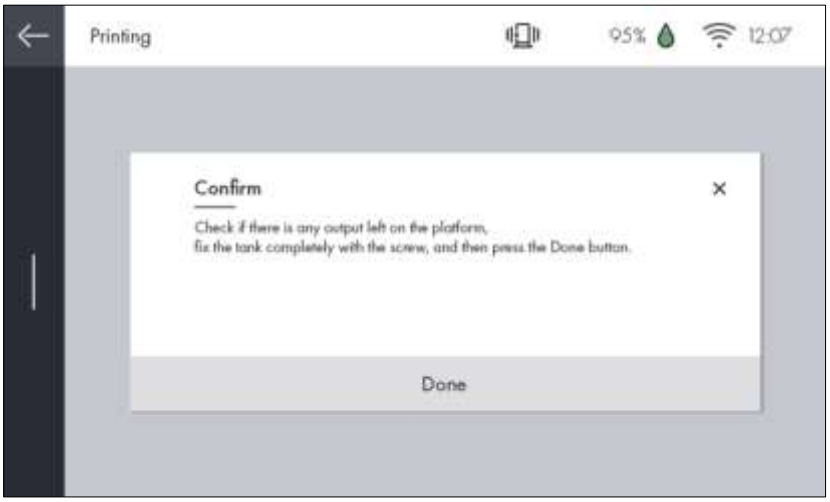
When the USB flash drive is connected while in the home screen, a list of files in the USB appears.



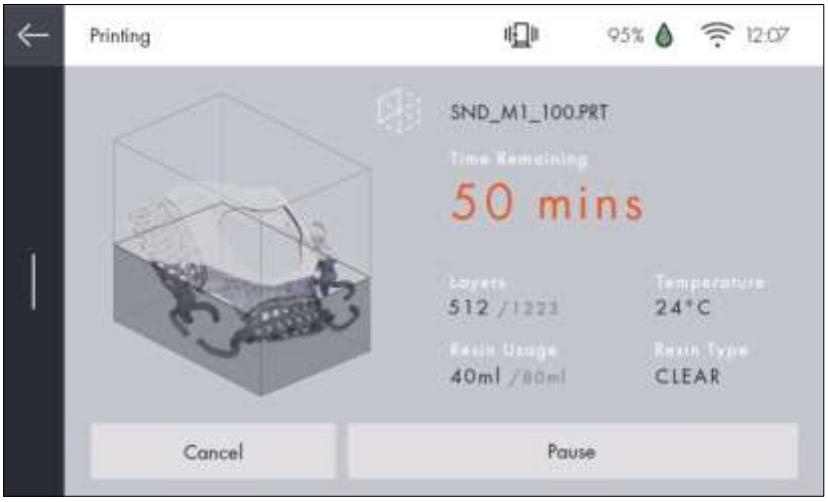
No.	Name	Description
1	**File Name**	A list of files existing in the USB flash drive.
2	**Download**	Downloading a file to the internal memory of the printer.
3	**Preview**	Preview image of print appears.

2 Printing Files

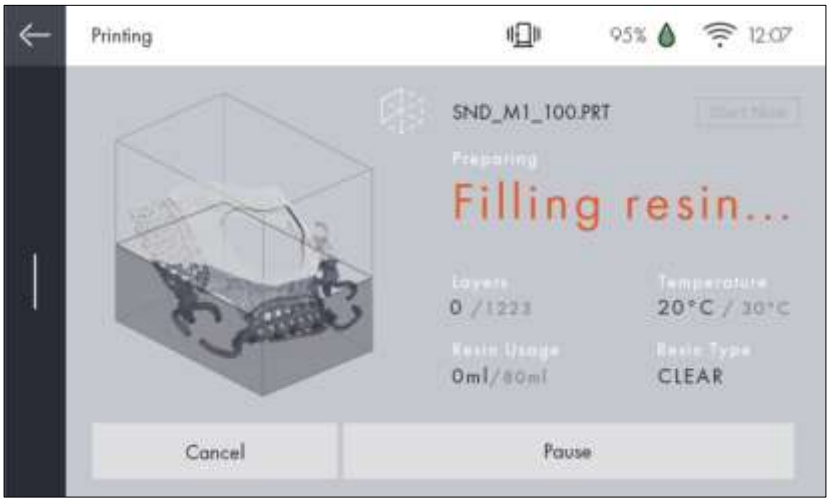
Select a file to print in a file list and then pop-up windows asking if everything is ready comes up. If there is no previous prints remaining and resin tank is installed properly, press [Done].

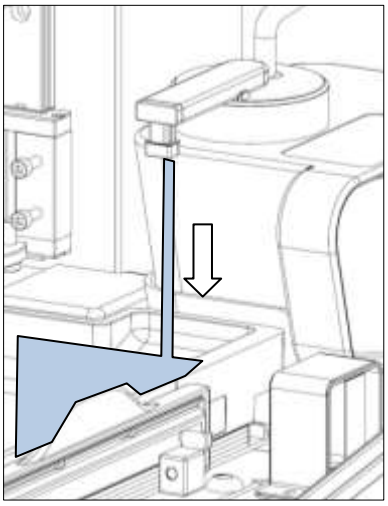


File is copied to the internal memory of printer first, and printing gets started.



If there is not enough resin in the resin tank, more resin needs to be filled. Air pump starts to run to supply resin and resin starts coming out of the nozzle of resin cartridge. Once resin is filled enough, pump stops and printing starts.



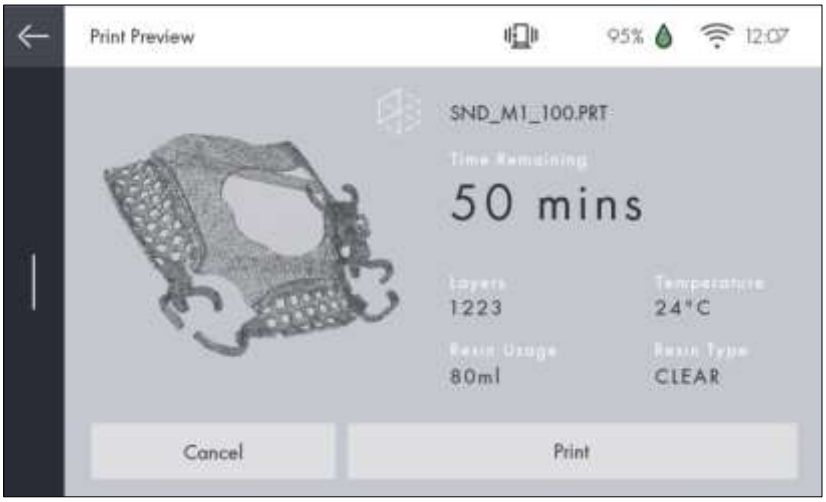


If temperature in the chamber is lower than the level being required, heater starts to heat up the chamber.

Be aware of that sometimes it may take a time for heating. When you are busy, you may need to start printing even if chamber temperature does not reach the target. If you can't wait until heating process is finished, press [Start Now].

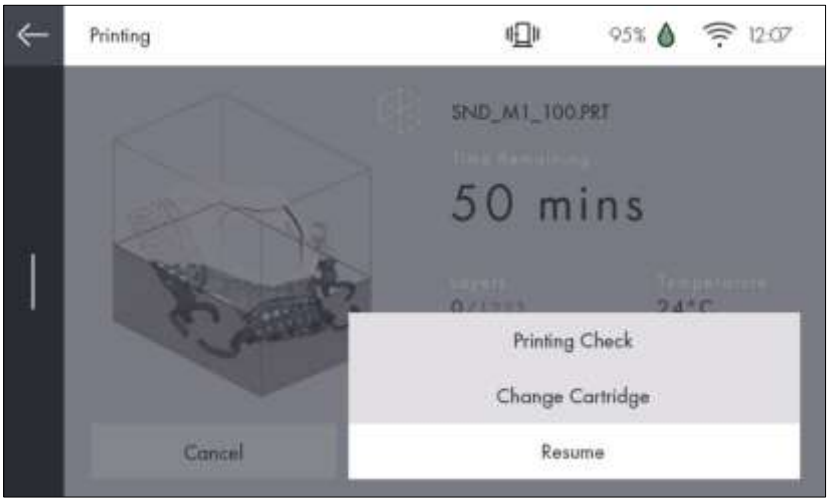
3 Print Preview

If you press [→] in a file list of USB flash memory, print preview screen appears. Press [Print] if you wish to start printing or press [Cancel] to go back to file list.



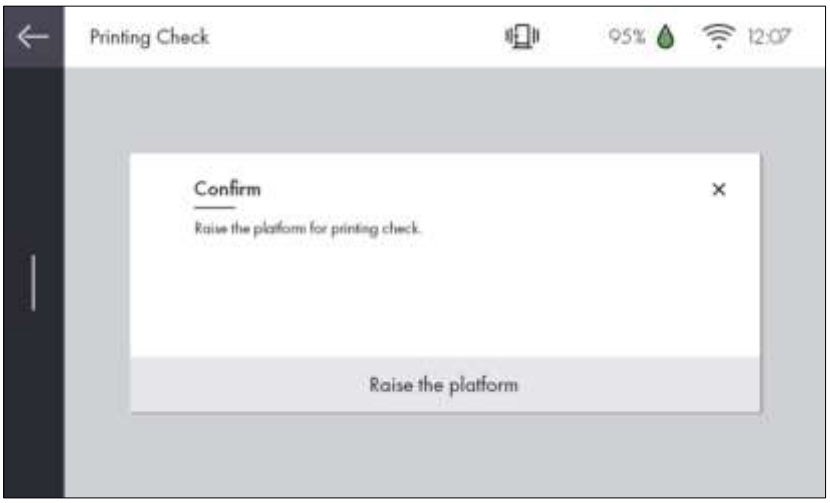
4 Pausing Print

Pressing [Pause] during printing will pause the current print job, and pop-up menu showing additional functions appears.



▣ Printing Check

Printing status can be checked. Press [Raise the Platform] to move the platform upward so that user can check printing status..



▣ Change Cartridge

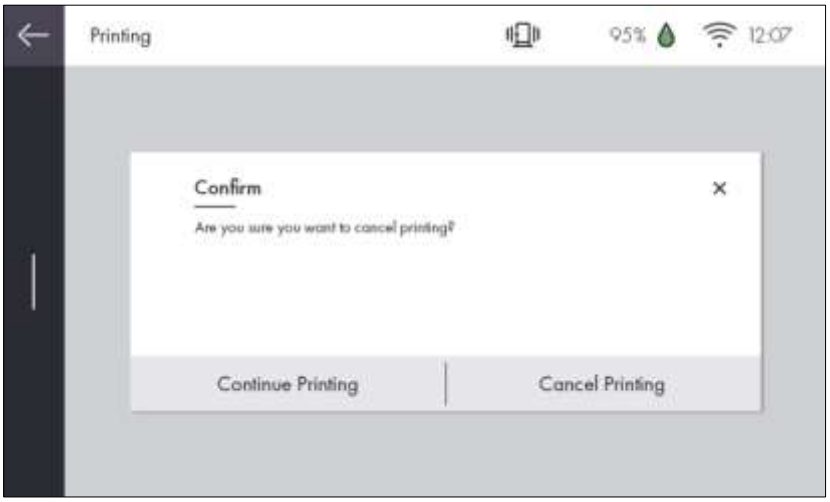
This function allows users to replace resin cartridge with new one if needed.

▣ Resume

Returning to the printing screen, and print job will resume.

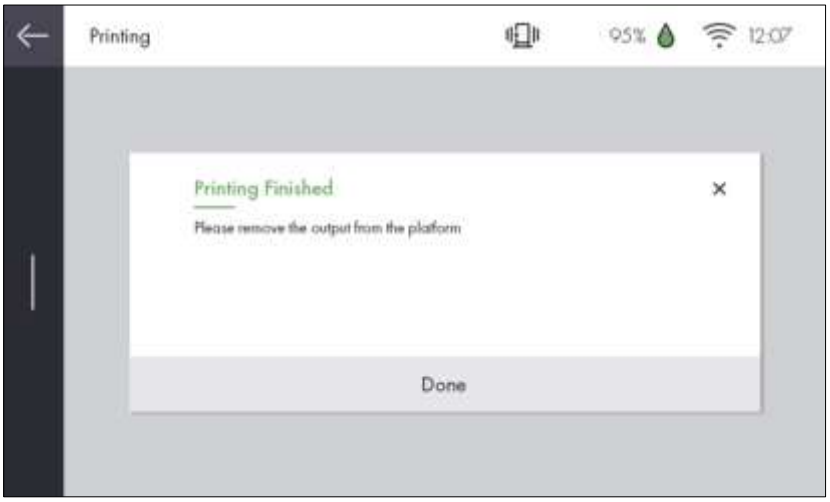
5 Canceling Print

Press [Cancel] if you need to terminate print permanently. Pop-up windows shows up to check If you really want to cancel printing. Press [Cancel Printing] if you are sure, or press [Continue Printing] if you want to resume printing.



6 Printing Completion

If printing is complete, platform moves up to return to ready position. When platform's moving is finished, remove print from the platform following on-screen instructions and press [Done].



Reference

For removing print from platform, refer to [4.Checking Printed Output] for details.

1.2 Printing via PC

1. Prepare PC connected to the same network which the printer is connected to.
2. Run Slicer S/W
3. Press [Print] button.
4. Follow steps (same as steps 3~9 of printing from USB flash drive)

Reference

For pausing and canceling print, please refer to [Printing from USB flash drive] for details.

1.3 Changing Resin

When a different type of resin from the current one needs to be used, clean up resin tank and platform in order to ensure the best print quality and to prevent mixing up of different type of resins.

Reference

Regarding how to clean resin tank and platform, refer to [5.Maintenance].

A1 Series
USER MANUAL

Printed Output Check

4

1. Checking Printed Output

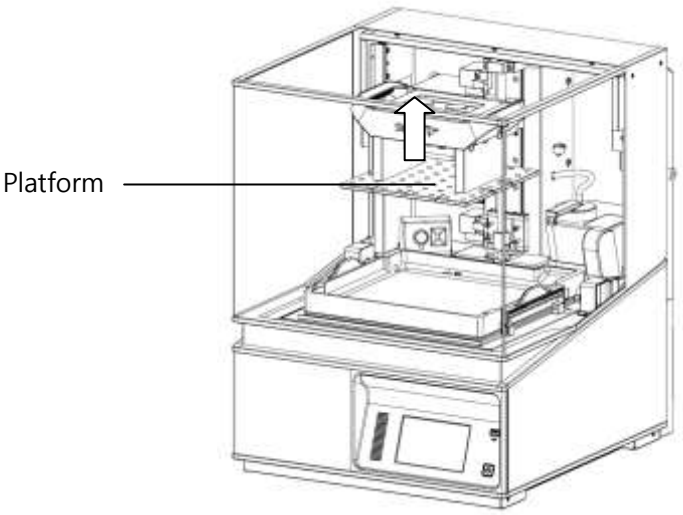
⚠ Caution

Wear nitril gloves before getting started and do not take off gloves until all processes are finished.

1.1 Detaching Printed Output

1 Standing by until platform's returning to ready position.

After printing is finished, wait until platform completely returns to ready position.
Do not open the orange cover before platform stops moving.

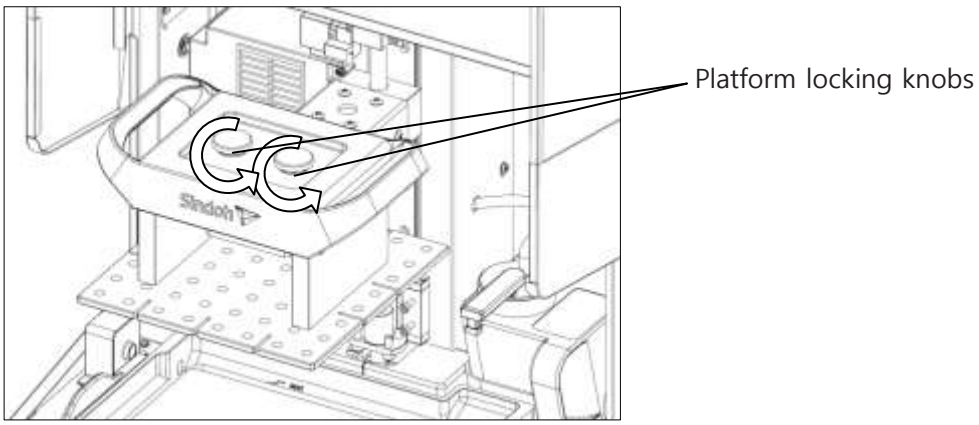


2 Removing platform locking knobs

When platform stops moving, open the orange cover and remove two platform locking knobs by turning them in counterclockwise direction.

ⓘ Important

Be careful not to drop knobs into resin tank when removing them.



3 Removing platform locking screws

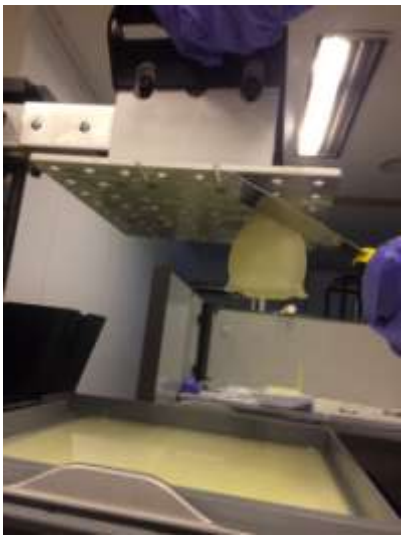
Hold the platform firmly by using either one of handles, and scrape down remaining resin on platform toward resin tank with the other hand.

Important

Be careful not to drop or splash resin to other parts but resin tank.

⚠ Caution

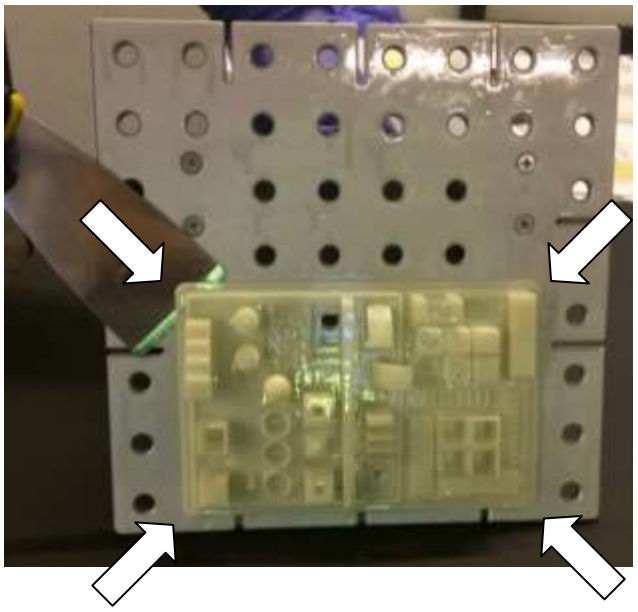
Use a metal scrapper with care because blade is sharp. You may be injured especially when scrapping platform.



4 Detaching the printed output from platform

Remove the platform and move it to cleaning tray enclosed in finishing kit. Insert blade of metal scrapper between printed output and platform and detach it by pushing scrapper slowly and carefully.

Start detaching from corners of printed output and continue to insert scrapper inward.



Important

When removing and moving platform, be careful not to drop or splash resin.

Caution

- Use a metal scrapper with care because blade is sharp. You may be injured when removing output.
- Close the orange cover after removing platform from the device. Resin can be cured if resin is exposed to light sources for long time. Cured resin may degrade the print quality, and cause print failure.

1.2 Finishing Printed Output

1 Removing supports

Remove supports using nipper enclosed in the finishing kit.

Caution

Use a nipper with care because blade is sharp. Be careful not to cut your fingers or hand.

2 Cleaning printed output with Isopropyl alcohol (IPA)

Caution

Do not place IPA close to heat, fire or sparks because IPA can be flammable, even explosive.

Pour Isopropyl alcohol(IPA) in the washing tub enclosed in the finishing kit, and put the printed output in IPA. Clean the surface of printed output using brush or toothbrush.

Use sprayer to wipe out fine gaps or holes of output with IPA.

3 Drying and post curing

Important

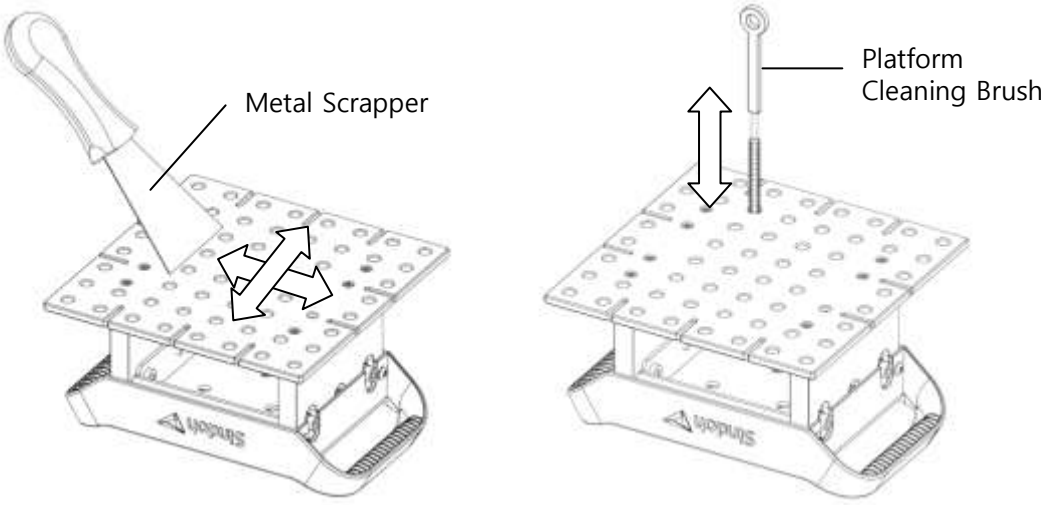
- Curing time may vary depending on the printed output's size and shape.
- For quick curing, fill a transparent container with water and put a printed output in the water.

Clean up Isopropyl alcohol completely using paper towel or dry it well using air compressor. Then expose the printed output to sunlight for 60 minutes, or use curing machine (optional) for curing.

1.3 Preparing the Next Print

1 Cleaning platform

Remove debris of print and contaminants remaining on platform using metal scrapper.
Clean every each holes of platform using platform cleaning brush.
Clean remaining resin using paper towel and Isopropyl alcohol.
Finally, clean all remaining Isopropyl alcohol using dry paper towel.



Important

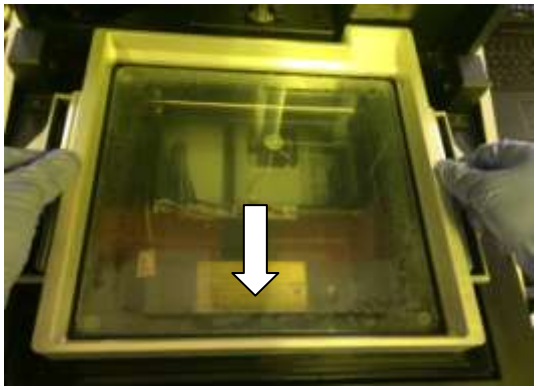
Please remove platform first, and install it very last. Resin dropped or splashed from platform may flow in the inside of the device.

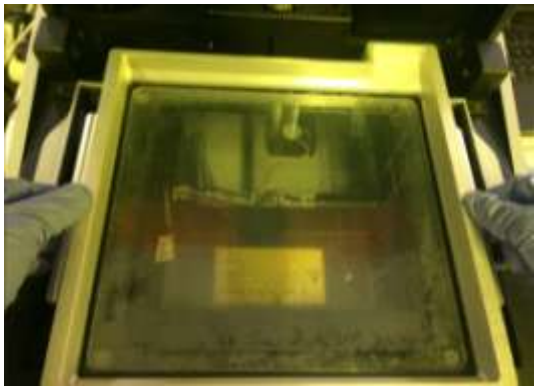
2 Cleaning resin tank

Release locking levers in both sides and pull out resin tank from the device.

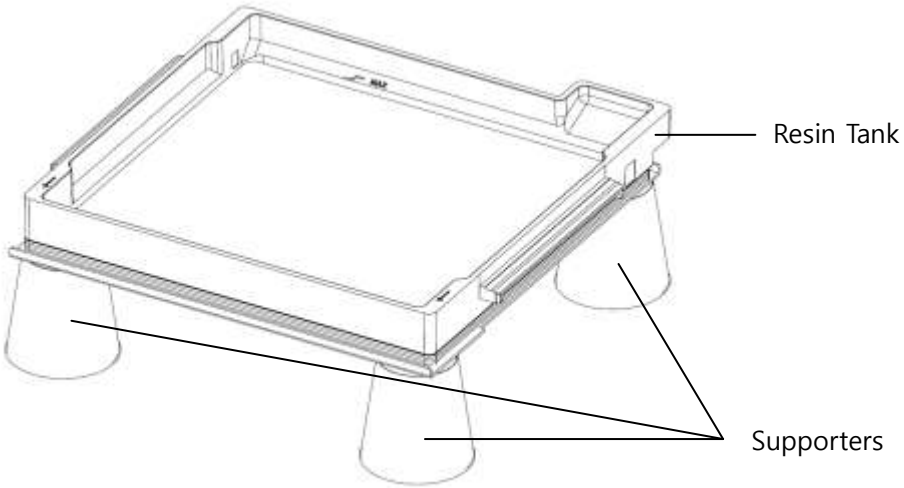
Important

- Before removing resin tank, check if platform cleaning has been done. If not, resin may be dropped to protective glass. It may result in contamination of optical parts such as protective glass, laser unit, etc or penetration of resin into the device.
- If there is remaining resin in resin tank, be sure not to drop or splash resin in handling resin tank.





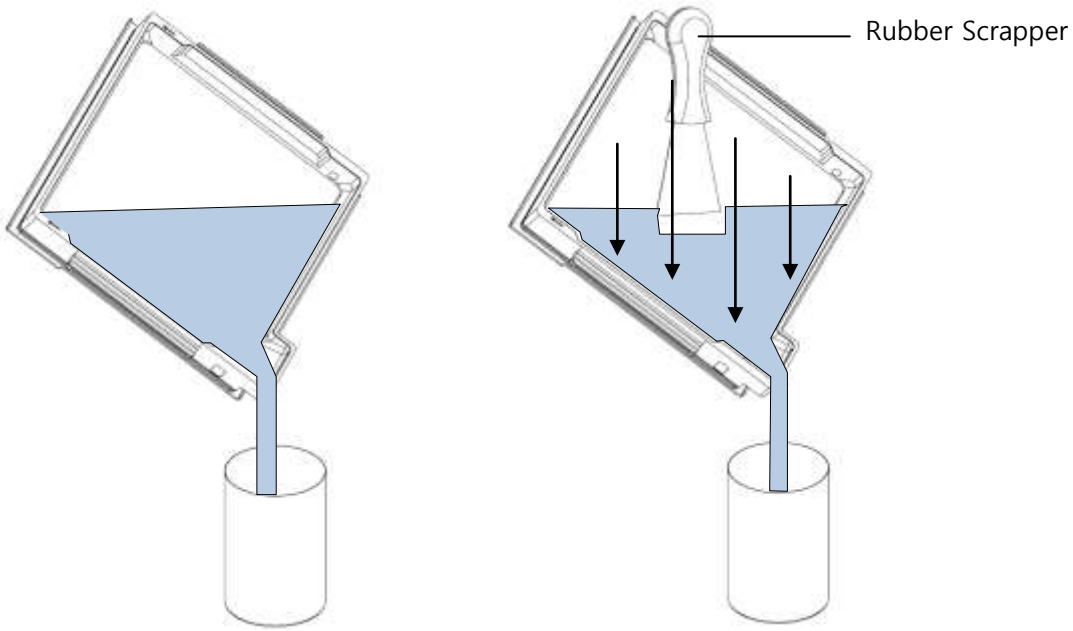
To prevent contamination of transparent acryl window in the bottom of resin tank, use some supports in four corners or lay a clean piece of paper underneath.



Pour all remaining resin into a clean bottle. If resin is not flowing down well, use rubber scrapper enclosed in the finishing kit to scrap down resin.

Important

If too much force is applied to the scrapper, film can stretch or tear. Scrape the surface of film softly.



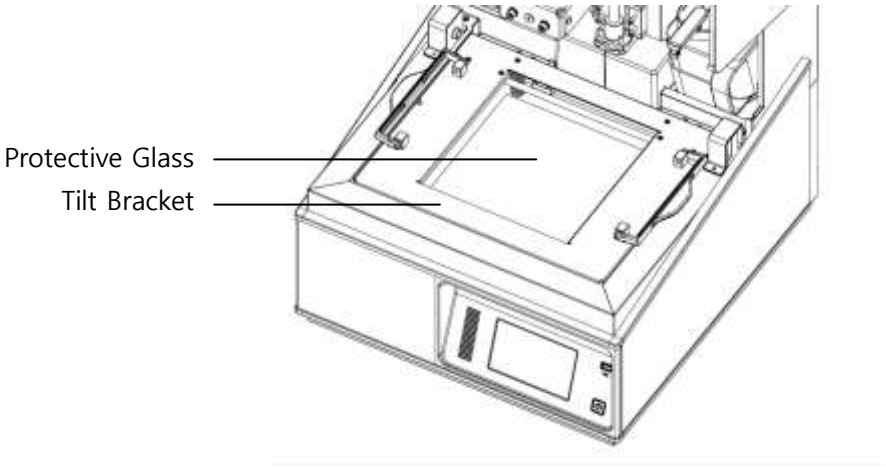
After pouring is done, remove all remaining resin inside of the resin tank using Isopropyl alcohol (IPA) and paper towel, and then clean up IPA using dry paper towel.

Important

- Never use Isopropyl alcohol (IPA) or ammonia-based cleaner to clean the bottom of the resin tank.
- In the bottom of resin tank, there is a transparent window made of Acryl (PMMA). Acryl (PMMA) material can cause chemical reaction with some type of chemicals such as IPA, ammonia-based cleaner, etc, so that window will be broken or deformed.
- Be sure to use a dedicated cleaner for acryl material to clean the transparent window.
- Do not place a bottle containing resin in a place where light source exists. Resin will be cured due to the light.

3 Checking protective glass

A transparent protective glass is located under the resin tank. It can be seen when resin tank is removed.



Check if there is resin or any types of contaminants on the protective glass, and clean if needed. For details of how to clean the protective glass, please refer to [Protective Glass] of [5. Maintenance].

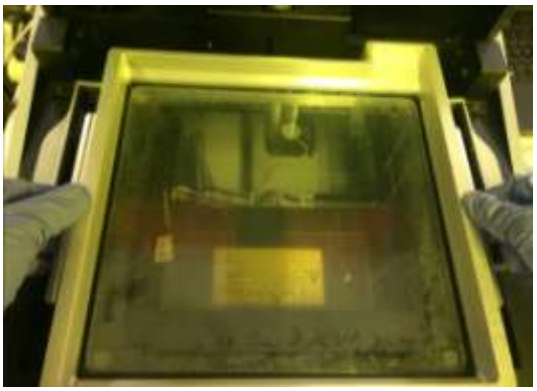
Important

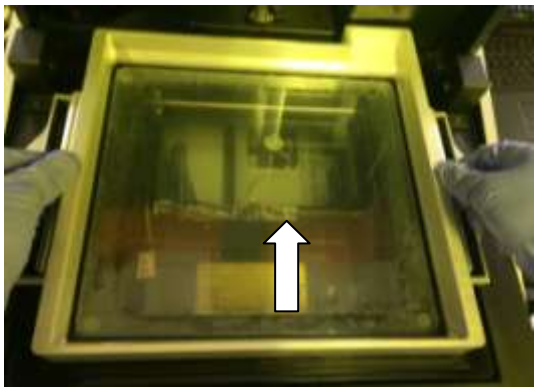
Protective glass is made of Acryl (PMMA). Never use Isopropyl alcohol (IPA) or ammonia-based cleaner to clean the protective glass.

4 Installing resin tank

Place the resin tank in the middle of mounting area. Check if the bottom of resin tank has a contact with the tilt bracket.

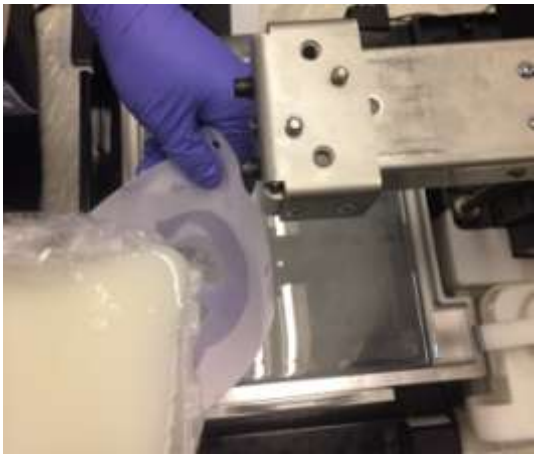
Then push the resin tank to backside until it stops moving, and the lock the resin tank with levers.

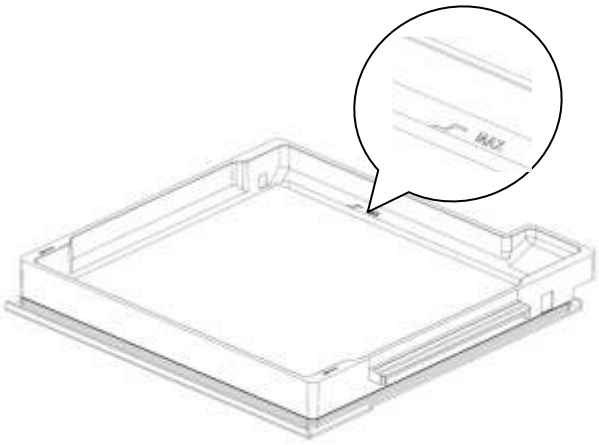




5 Supplying resin

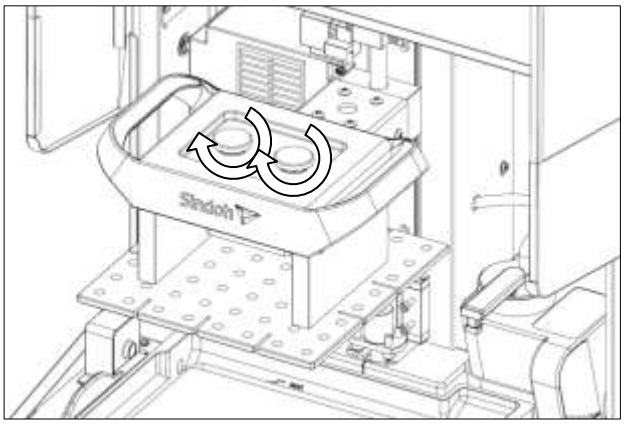
Pour the resin, which was stored in a clean bottle, back into the resin tank using filter.
Be careful not to exceed the MAX line shown on the resin tank.





6 Installing platform

Install the platform on the mount, and fasten two knobs by turning in clockwise direction.



7 Closing that orange cover

1.4 Enhancing Print Quality

1 Following the guideline for resin use

Print quality is seriously influenced by condition of resin. Start use resin before the expiration date, and store resin under the recommended conditions including temperature and humidity.

2 Installation site

Running the device in the place exposed to shocks and vibrations may cause degradation of print quality or printing failure. Install on the leveled place that is not affected by shock and vibration

2. When Printer Can’t be Turned ON

1 When the power is ON again, platform moves upward to initial position.

2 As described in [1. Checking Printed Output], remove aborted print from the platform, and clean platform and resin tank for the next job.

3. If problems Persist

1 Please visit http://www.sindoh.com for help.

A1 Series
USER MANUAL

Maintenance

5

1. Machine Cleaning

⚠ Caution

If a cleaning tool or contaminants such as resin, IPA, etc enters into the device, it may cause malfunctions or failures. Turn off the power while cleaning.

1.1 Printer Interior Cleaning

Over time, there will be a build-up of resin in the printer. If resin goes into conveyor belt or any optical parts, it may result in printer malfunction, degradation of print quality, and printing failure.
Please clean the inside of the printer regularly or right after print job.

⚠ Caution

Wear nitril gloves if there is any risk of touching resin.

1.2 Periodical Inspection

Oil/Grease Inspection

During manufacturing, grease/oil is applied to some mechanical parts, especially driving system.
After a period of time, grease and oil can dry and cause some noise during operation.
At least once a month, inspect the condition of grease and oil.
Especially, if printer begins to make a noise during operation, immediately check if grease and oil is applied properly. If necessary, contact local service center for inspection.

1.3 Platform

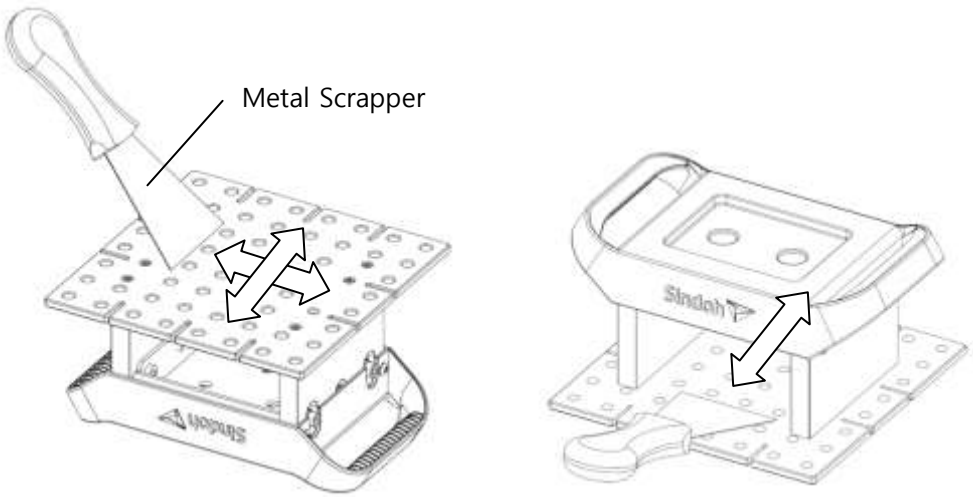
If debris of cured resin, half-cured resin, contaminants exist on the surface of platform or in the holes of it, platform leveling may not be performed perfectly. They can cause the degradation of print quality, or print failure just in case.

For the best printing performance, clean the platform regularly and after each printing jobs.

⚠ Caution

Wear nitril gloves before starting cleaning.

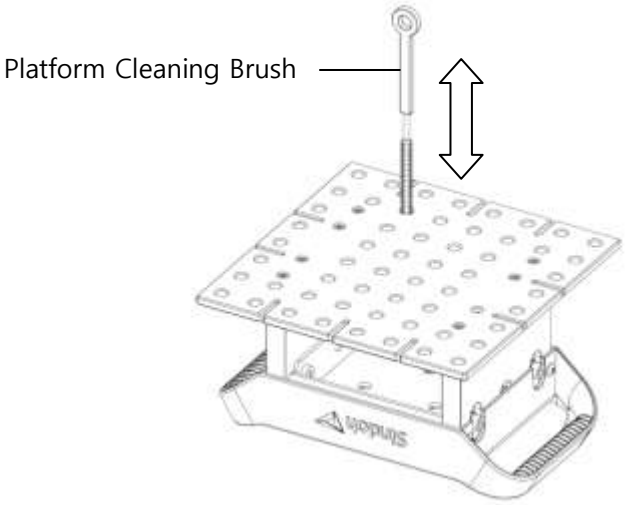
1 Remove debris of print and contaminants remaining on platform using metal scrapper. Clean every surface including upper and lower surfaces, and any possible place which resin may be applied.



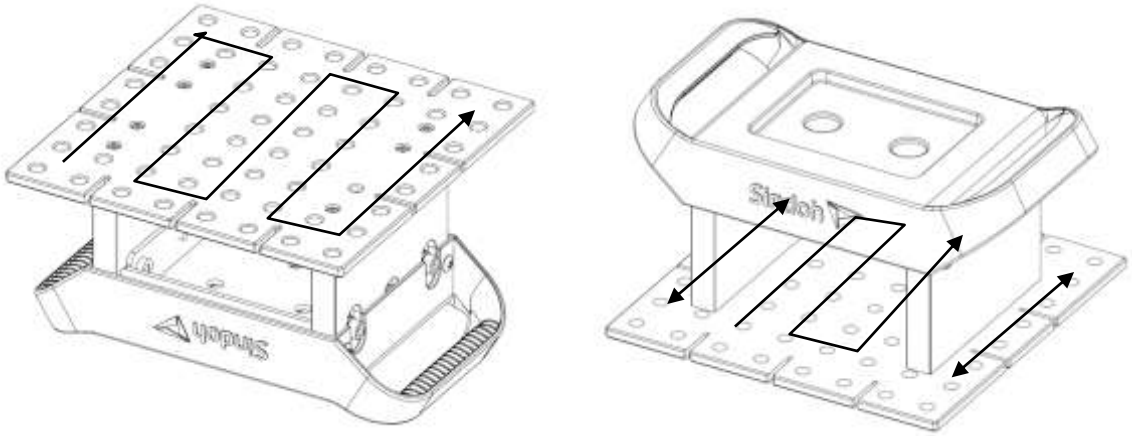
⚠ Caution

Use a metal scrapper with care because blade is sharp. You may be injured especially when scrapping platform.

2 Clean every each holes of platform using platform cleaning brush.



3 Clean remaining resin using paper towel and Isopropyl alcohol. Finally, clean all residual Isopropyl alcohol using dry paper towel.



⚠ Caution

Do not place IPA close to heat, fire or sparks because IPA can be flammable, even explosive.

1.4 Resin Tank

Resin tank consists of aluminum die-casted walls, transparent window, flexible film, silicon gaskets.

For the best print quality, it is very important to keep optical parts such as transparent window and flexible film clean and undamaged. If window and film is scratched, damaged, or contaminated, laser beam will be scattered, reflected or blocked. These defects may cause degradation of print quality or print failure.

For the best performance and life, ensure that resin tank is maintained as directed.

1.4.1 Resin Tank Life

Resin tank's life can vary depending on shape and size of prints, printing location, layer thickness and resin type. If resin tank is well maintained, it can be used generally until at least 100 print jobs or 1,000 hours

Film needs to be replaced if a hole, scratch, tear, stretch or any types of serious damage occurs. In addition, replace transparent window if it gets scratched or dirty with contaminants, which cannot be removed.

1.4.1 Checking Resin Tank

⚠ Caution

Wear nitril gloves before starting cleaning.

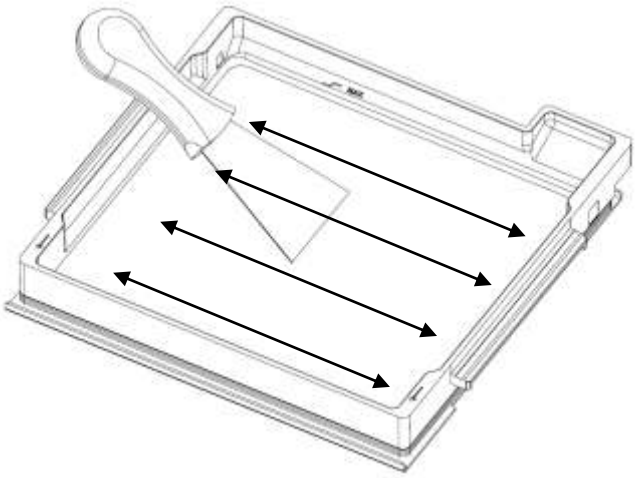
Thoroughly check the resin tank in case that print quality is not good, print failure occurs, and resin tank is changed. Before starting new print job, clean the resin tank and check if problems exist.

1 Checking the inside of resin tank

To check the inside of resin tank, inspect it by scrapping the bottom of resin tank using rubber scrapper. Look at film and transparent window by carefully scrapping from one side to the other.

Important

Do not scrape the bottom of resin tank too strongly. Film can loosen or tear out.

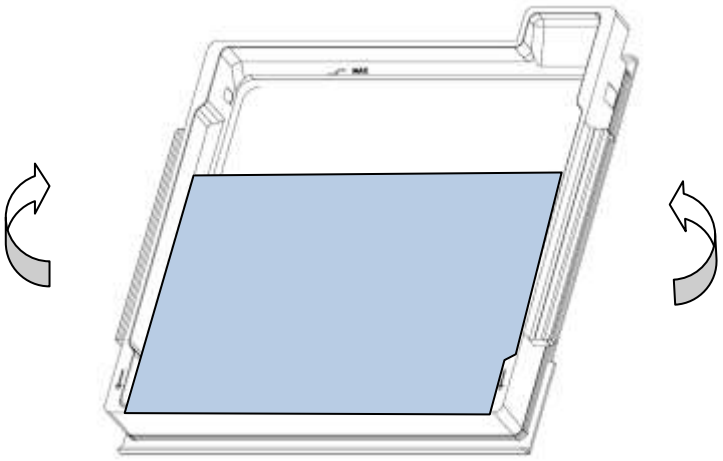


Remove the following contaminants below. Use cleaning filter for the better cleaning performance. If serious damages like hole, scratch, etc are found in film and transparent window, repair or replace resin tank.

- Residues of prints sticking to film
- Cured resin or particles floating in resin
- Pigmentation of film
- Damages like hole, scratch, etc of film

2 Checking the outside of resin tank

Upset the resin tank, and check if fingerprints, dirt, and scratches exist on transparent window. If resin is still filled in the resin tank, tilt the resin tank to let resin flow to see the bottom of it.



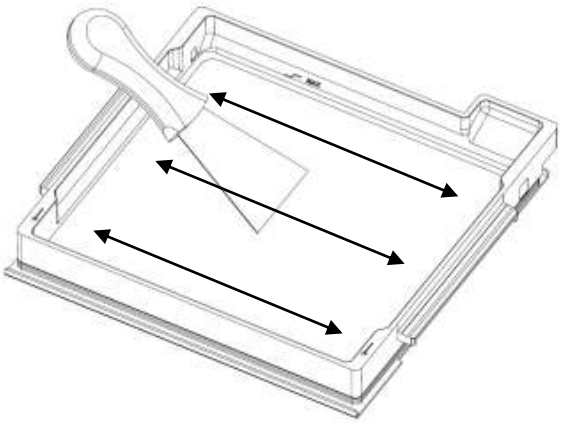
1.4.3 Cleaning Resin Tank

⚠ Caution

Wear nitril gloves before starting cleaning.

1 Cleaning film

Use fingers or rubber scrapper to remove residues of prints sticking to film and cured resin or particles floating in resin.

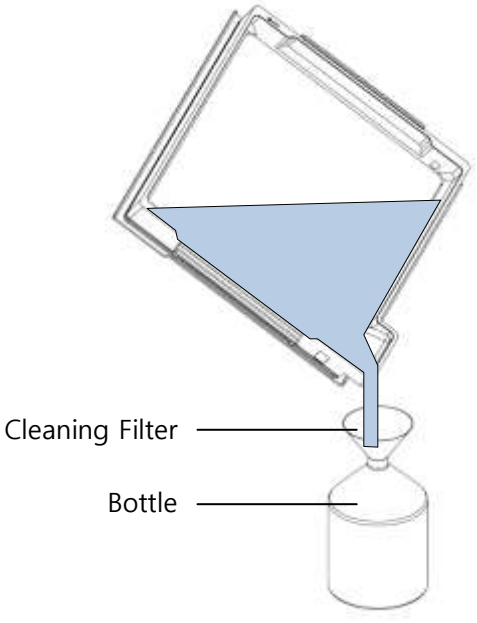


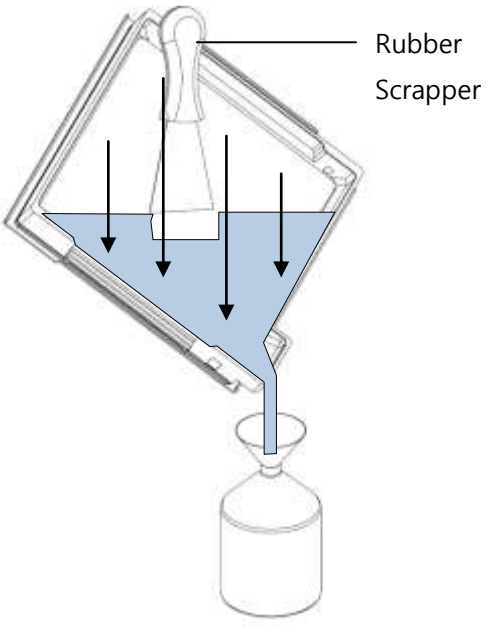
Important

Do not scrape the bottom of resin tank too strongly. Film can loosen or tear out.

2 Filtering remaining resin

If meticulous cleaning is necessary, use cleaning filter. If resin does not flow down from the resin tank, use rubber scraper to scrape down resin.





⚠ Caution

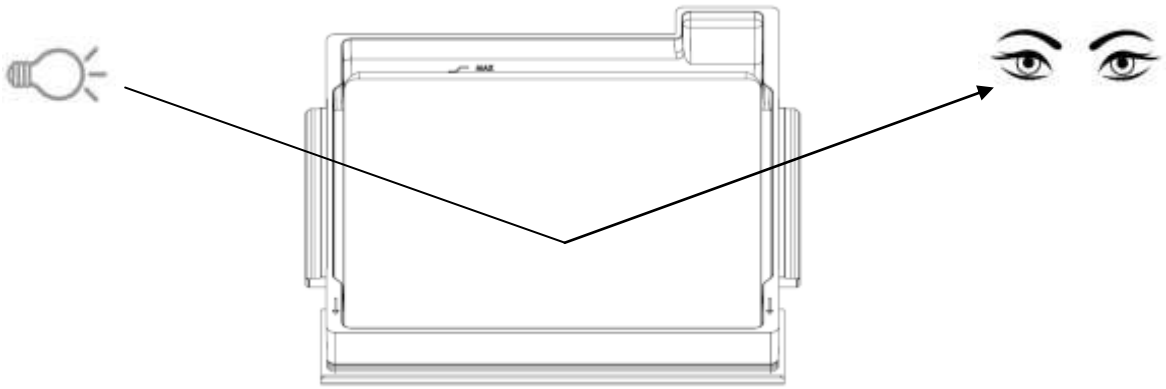
- Use a safe bottle made of stainless steel or transparent PE/PP plastic. It not, resin can be pigmented, or bottle can be melted down and mixed with resin.
- Be careful not to drop or splash resin when pouring resin.

Important

Do not scrape the bottom of resin tank too strongly. Film can loosen or tear out.

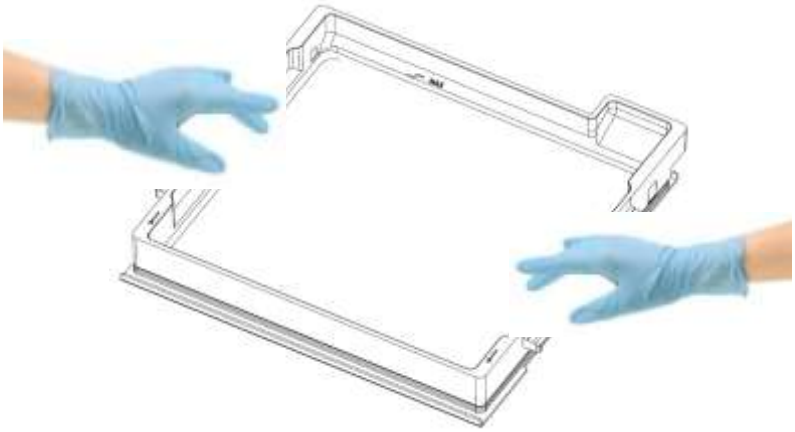
3 Checking transparent window

After clearing all resin from the resin tank is down, check the status of transparent window. Make a light illuminate the transparent window with some angle and see a reflected light to check if contaminants, fingerprints and dirt exist on it.



Reference

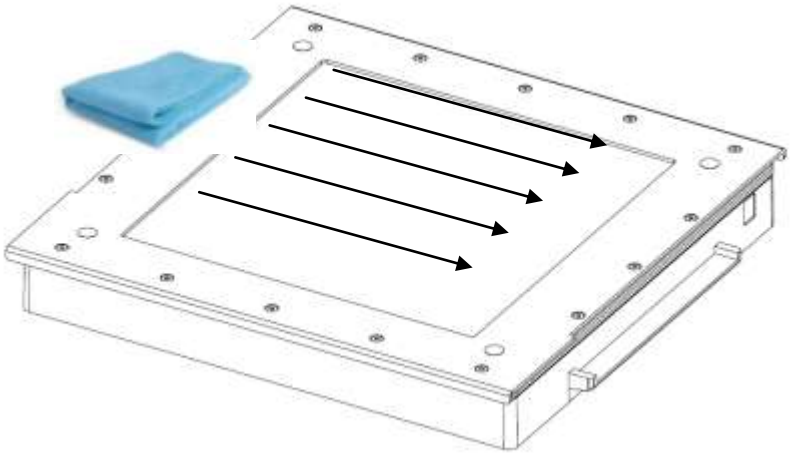
Grab surrounding edges or handles of resin tank to prevent contamination of transparent window.



4 Cleaning transparent window

Transparent window needs to be cleaned only with clean microfiber cloth and a dedicated cleaner for acryl (PMMA) material, for example, NOVUS No.1 Plastic Clean and Shine. Non-microfiber cloth or paper towel can scratch the transparent window.

① Upset the resin tank to put transparent windows to upward. Be sure to place the resin tank on the flat surface.
② Spray cleaner to the transparent windows once or twice, and wipe it from one side to the other without stopping.
③ Repeat ② until cleaning the transparent is finished.
④ To prevent the dust or dirt from being reattached to the transparent window, fold the microfiber cloth to use a new surface each time you wipe.



⚠ Caution

Never use Isopropyl alcohol (IPA) or ammonia-based cleaner to clean the transparent window. Otherwise transparent window will be broken or deformed.

5 Re-checking transparent window

Check the status of transparent window again using the method described in 3. Repeat checking and cleaning the transparent windows until transparent window gets cleaned well.

6 Cleaning walls

Clean walls made of aluminum die-casting with some Isopropyl alcohol (IPA) and paper towel.

1.5 Protective Glass

Protective glass is made of transparent acryl (PMMA) to pass through laser beam with maximum efficiency. In addition, it blocks external dust or resin from penetrating inside the device.

For the best printing performance, it is very important that the protective glass is not scratched or contaminated. If glass is damaged or contaminated, laser beam may be cut off or diffused, so that print quality degradation or printing failure may occur.

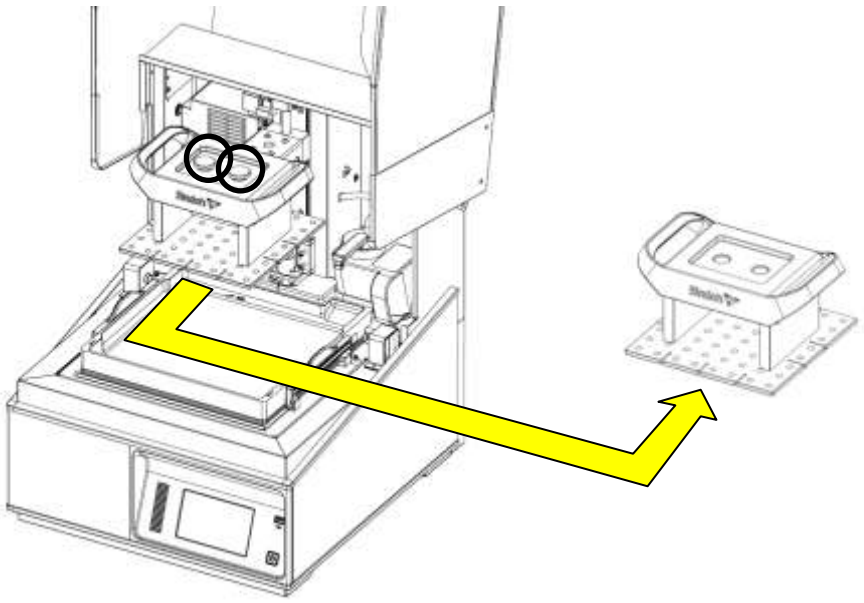
In case of print quality issue or printing failure, check the status of protective glass and clean it if necessary.

⚠ Caution

Wear clean nitril gloves before starting cleaning.

1 Removing platform

Remove platform because resin or other contaminants can be dropped from it.
Open orange cover, and remove two platform locking knobs to take out the platform from the device.

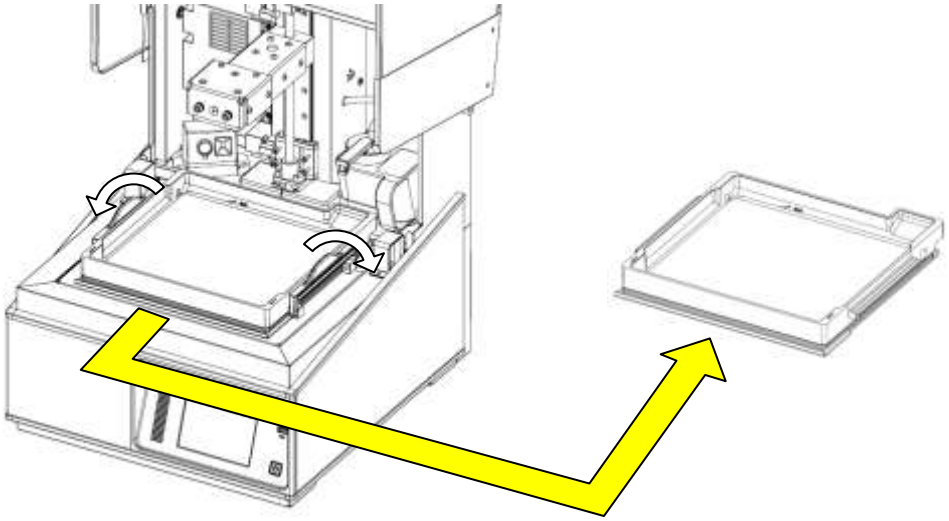


2 Removing resin tank

Take out resin tank by unlocking handles.

⚠ Caution

If resin is still filled in the resin tank, be careful not to drop or splash resin when you remove resin from the resin tank or try to move the resin tank.



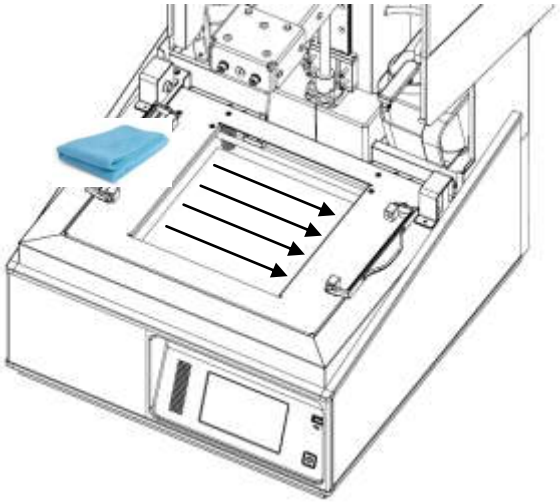
3 Cleaning protective glass

Protective glass needs to be cleaned only with clean microfiber cloth and a dedicated cleaner for acryl (PMMA) material, for example, NOVUS No.1 Plastic Clean and Shine. Non-microfiber cloth or paper towel can scratch the protective window.

① Spray cleaner to the protective glass once or twice, and wipe it from one side to the other without stopping

② Repeat ① until cleaning is finished.

③ To prevent the dust or dirt from being reattached to the protective window, fold the microfiber cloth to use a new surface each time you wipe.

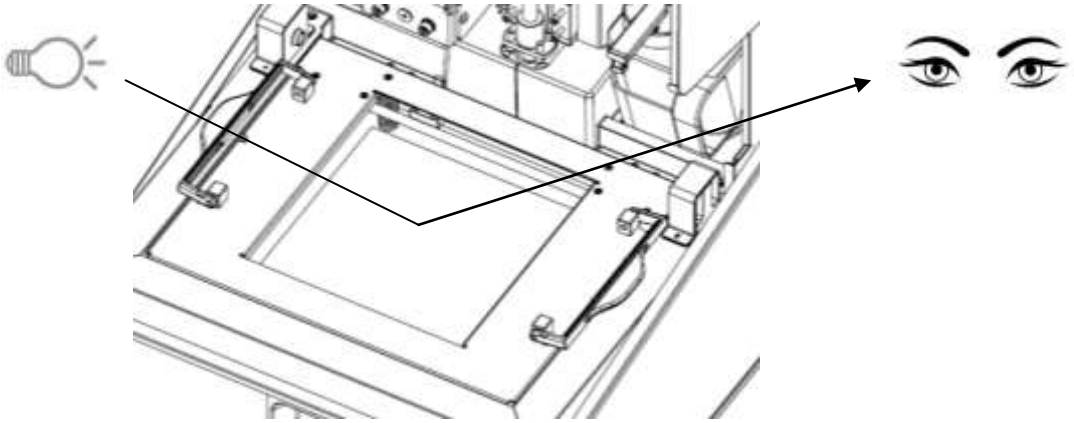


⚠ Caution

Never use Isopropyl alcohol (IPA) or ammonia-based cleaner to clean the protective window. Otherwise protective window will be broken or deformed.

4 Checking protective window

Check protective window by using reflected light as the exactly same way of checking the transparent window of the resin tank.



4 Installing resin tank and platform back

⚠ Caution

If resin is still filled in the resin tank, be careful not to drop or splash resin when you remove resin from the resin tank or try to move the resin tank.

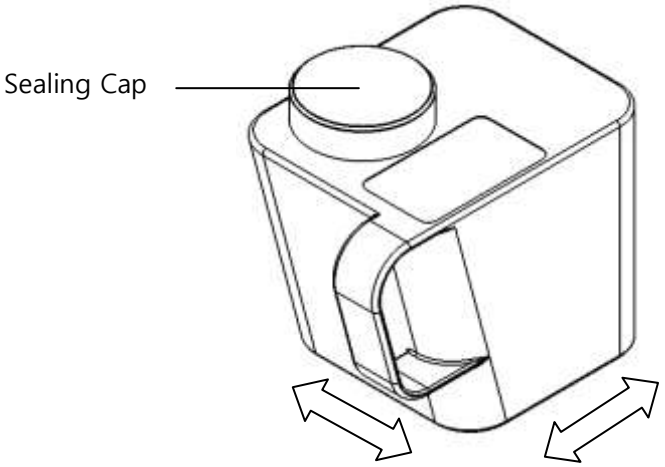
1.6 Resin Cartridge

1.6.1 Managing Resin Cartridge

Photo curable resin is composed of various chemical ingredients. For the best print quality, shake unused resin cartridge at least one a week, so that ingredients are well mixed.

⚠ Caution

Ensure a sealing cap is firmly closed before shaking.

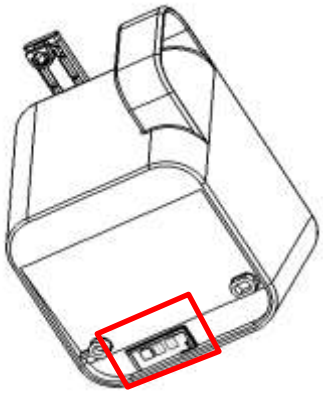


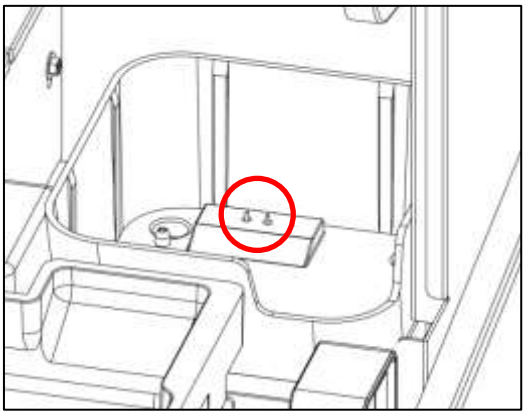
1.6.2 Storing Resin Cartridge

Store resin cartridges in a dark and well ventilated place. Avoid location where temperature and humidity is too high or too low.

1.6.3 Cleaning Smart ID Terminals

If the smart ID chip on the bottom of the resin cartridge, or terminals on the cartridge mount are contaminated with resin, etc, the cartridge may be not be properly detected even if the cartridge is mounted. Be careful that the Smart ID Chip and terminals are not contaminated or damaged by resin.





If the smart ID Chip or terminals are contaminated with resin, etc, clean them by rubbing a cotton swab with a small amount of Isopropyl alcohol (IPA) until contaminants are completely removed.

⚠ Caution

- Be careful not to get Isopropyl alcohol on the resin tank or other parts of the cartridge by mistake.
- Ensure that Isopropyl alcohol (IPA) is completely dry before installing the resin cartridge.
- Ensure that the sealing cap is firmly closed before cleaning.

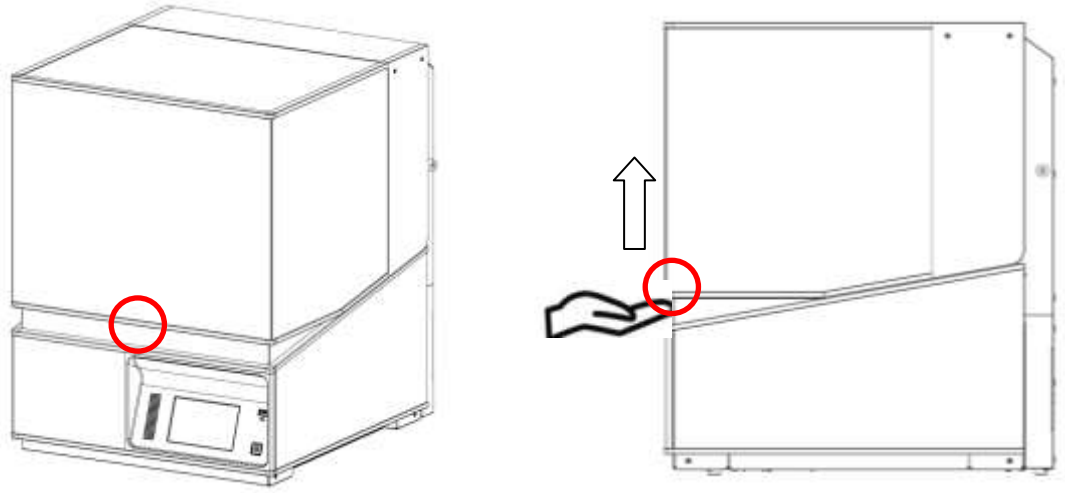
1.7 Orange Cover

The orange cover is made of translucent orange acryl (PMMA) material in order to allow users to check the situation of inside the device. Orange acryl is a specially selected material to safely shield the laser beam.

To prevent users from accidentally using the device with the cover open, double safety devices are used; when the cover is opened during printing, the device is designed to temporarily stop printing for user's safety. However, because it may result in the degradation of print quality or printing failure, do not open the orange cover during printing by mistake.

1.7.1 Opening the Orange Cover

To open the orange cover, insert fingers into the bottom of the cover, and lift it up.

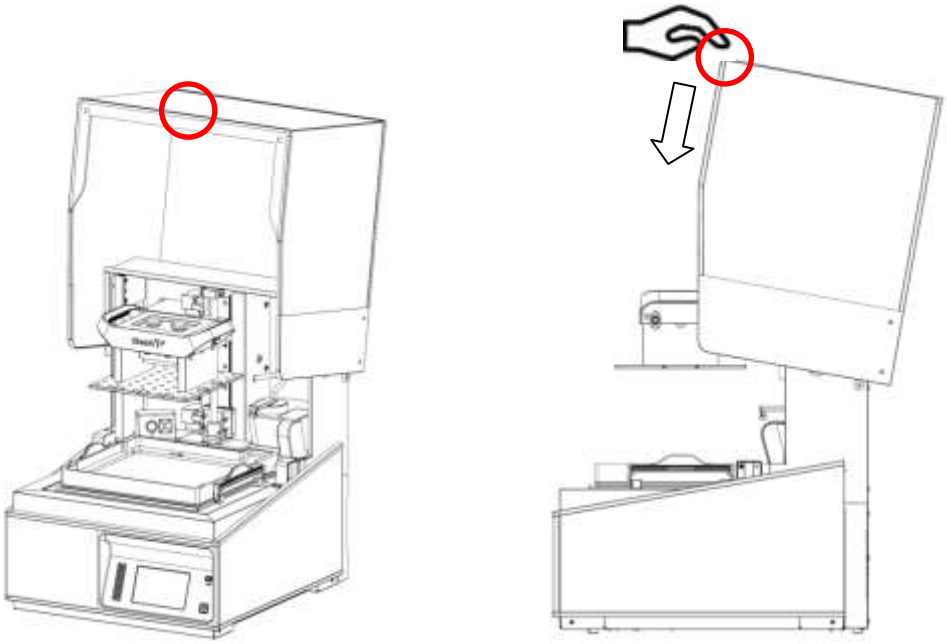


Reference

Lift the center part of the cover in order to open easily. If you lift the left or right part, force is dispersed, which needs more force than the center.

1.7.2 Closing the Orange Cover

To close the orange cover, grasp the top center of the cover by fingers and pull it down. If you pull the cover slightly forward, it will automatically fall down slowly thanks to weight of the cover itself.



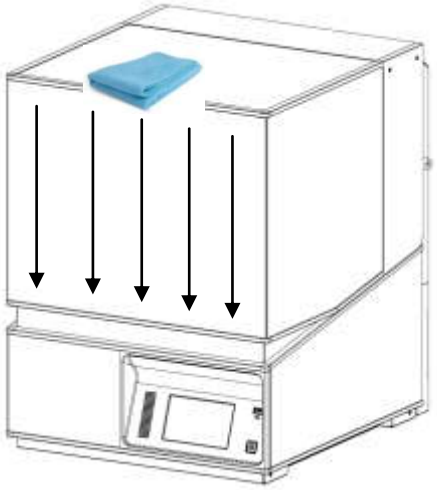
Reference

Pull the center part of the cover in order to close easily. If you pull the left or right part, force is dispersed, which needs more force than the center.

1.7.3 Cleaning the Orange Cover

Orange cover needs to be cleaned only with clean microfiber cloth and a dedicated cleaner for acryl (PMMA) material, for example, NOVUS No.1 Plastic Clean and Shine. Non-microfiber cloth or paper towel can scratch the orange cover.

① Spray cleaner to surface of orange cover once or twice, and wipe it from one side to the other without stopping
② Repeat ① until cleaning of the surface is finished.
③ Repeat ①~② until cleaning of all the surface is finished.
④ To prevent the dust or dirt from being reattached to the orange cover, fold the microfiber cloth to use a new surface each time you wipe.



⚠ Caution

Never use Isopropyl alcohol (IPA) or ammonia-based cleaner to clean the orange cover. Otherwise orange cover will be broken or deformed.

2. Error Messages and Solutions

Message	Description	What To Do
Booting **Please wait until booting is complete.**	On the first boot, user must wait until the booting process is finished.	Once the boot up process is finished and device is ready, this message disappears automatically.
EC 301	Error with main cooling fan in the rear.	Check if there is any foreign substance interfering fan operation, and remove it that you may find, or reboot the device. If problem persists after rebooting, request A/S.
EC 302, 303, 304	Error on cooling fans inside the device.	Reboot the device. If problem persists after rebooting, request A/S.
EC 312	During printing, chamber temperature of higher than 40℃ has been detected more than 10 times.	Reboot the device. If problem persists after rebooting, request A/S.
EC 321	No image data is available even if camera function is turned ON.	Reboot the device. If problem persists after rebooting, request A/S.
EC 411, 412, 413	Problem with laser unit.	Reboot the device. If problem persists after rebooting, request A/S.
EC 501, 502, 503	Problem with laser unit transport system.	Reboot the device. If problem persists after rebooting, request A/S.
EC 511, 512, 513, 516, 517	Error with platform transport system.	Reboot the device. If problem persists after rebooting, request A/S.
EC 521, 522	Error with tilt driving system..	Reboot the device. If problem persists after rebooting, request A/S.
EC 525	Printing can't start because resin tank is not installed.	Resin tank's locking levers are secured properly. If problem persists, reboot the device, or request A/S.
EC 601	Printing can't start because a sufficient resin is not supplied.	If auto resin supply is turned OFF, supply more resin into the resin tank manually. If auto resin supply is turn ON, check transparent windows of resin tank being used to detect level of resin. Clean them if necessary. Check if smart IC chip and terminals are clean. Check the tube of resin cartridge. Replace resin cartridge. If problem persists, request A/S.
EC 602	Error with smart IC chip of resin cartridge.	Check if smart IC chip and terminals are clean. Replace resin cartridge. If problem persists, request A/S.
Notification 311	Chamber temperature does not reach the target temperature in 60 minutes.	Wait until chamber reaches the target temperature, or press [Start Now] to start printing.

3. Problems and Solutions

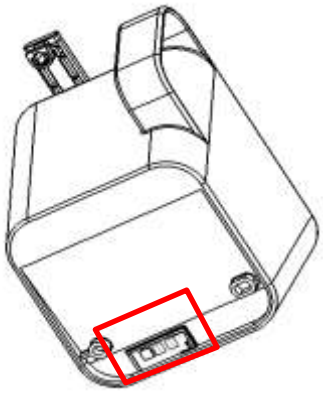
3.1 If the Resin is not Properly Supplied

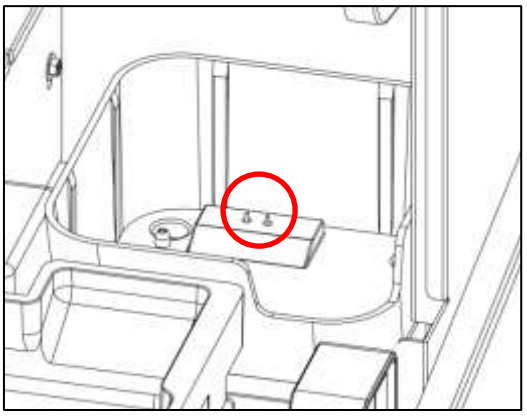
3.1.1 Checking Auto Resin Supply Function

If [Auto Resin Supply] function is set to [OFF], resin will not be supplied automatically. Check if [Auto Resin Supply] function is set to [ON].

3.1.2 Checking Smart IC Chip and Terminals or Resin Cartridge

If smart IC chip or terminals are contaminated with resin, etc, resin cartridge may not be detected even if it is properly installed.

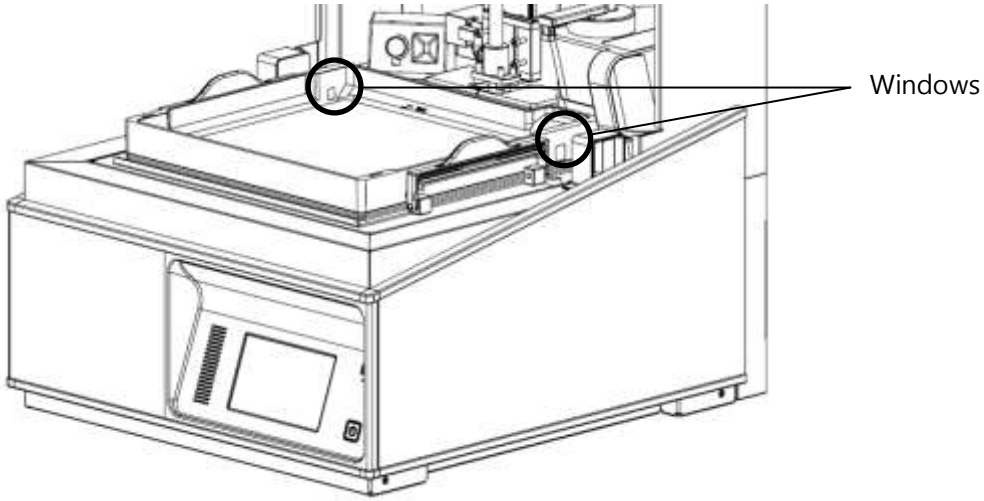




For details of how to clean smart IC chip and terminals, refer to [Resin Cartridge] of [5.Maintenance]

3.1.3 Checking Transparent Windows for Level Detect Sensors

There are two small transparent windows for level detect sensors. They are located in backside of left and right. If those windows are contaminated, resin may not be supplied automatically because S/W considers that the sufficient resin is already filled in the resin tank.

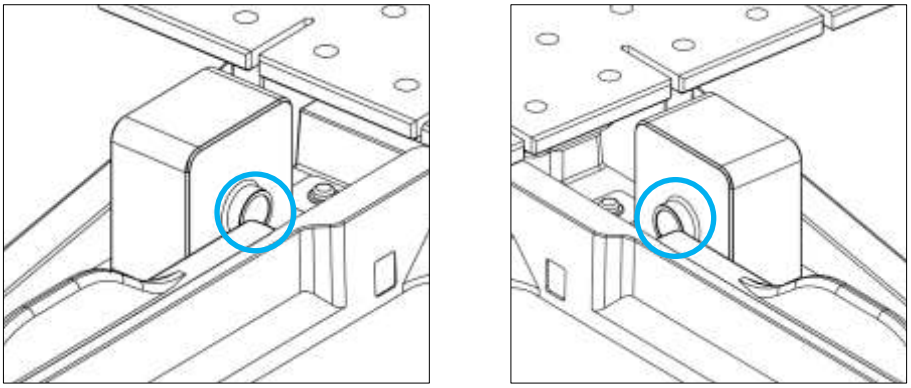


For details of how to clean those windows, refer to [Resin Tank] of [5.Maintenance].

3.1.4 Checking Level Detect Sensors

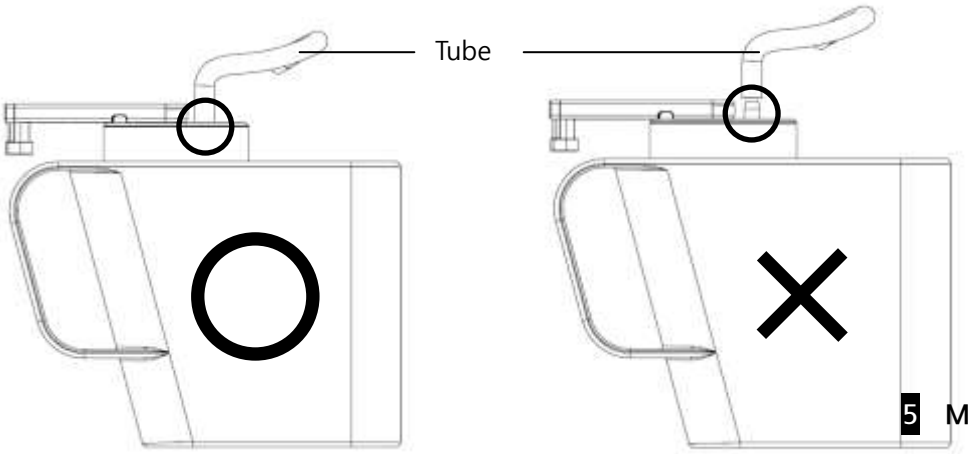
There is a pair of sensors located in both sides of resin tank in order to detect how much resin is filled in the resin tank. If a cylindrical hole, which the detecting light from sensor passes though, is blocked, it is recognized that a sufficient amount of resin is filled in the resin tank and the resin is not supplied automatically.

Remove any contaminants if they exist in the cylindrical holes to prevent malfunctions.



3.1.4 Checking Tube

If air pump tube is not properly connected to resin supply cap, there may be a problem with resin supplying. Ensure that the end of tube is pushed completely down up to the bottom of the resin cartridge.



3.1.5 Resin Supply in Open Mode

If 3rd party resin is used in open mode, resin may not be supplied or may be overflowed. Set [Auto Resin Supply] function to [OFF] if you operate the device in open mode.

3.1.6 Empty Resin Cartridge

If all resin in the resin cartridge runs out, resin won't be supplied. Replace with a new one.
For details of how to replace a resin cartridge, refer to [Replacing Resin Tank] of [5.Maintenance].

⚠ Caution

- Smart IC chip is used to keep track of the remaining amount of resin in the cartridge. If resin is manually charged or removed from the resin tank, malfunction may occur because it cannot detect the correct remaining amount.
- Do not charge remaining resin into another cartridge. Malfunction may occur because resin amount that smart IC chip knows may be different from the actual one.
- If resin cartridge has been used in manual supply mode, keep using it in manual mode.
- If resin is once used for printing in the resin tank, store in the different bottle.

3.2 In case of Opening Orange Cover during Printing

To prevent users from accidentally using the device with the cover open, double safety devices are used; when the cover is opened during printing, the device is designed to temporarily stop printing for user's safety. Once the cover is closed, printing will resume.

However, because it may result in the degradation of print quality or printing failure, do not open the orange cover during printing by mistake.

3.3 In case of Printing Failure

Inevitably, printing can fail. In the event of printing failure, a small piece of missing or incompletely hardened resin will float in the resin tank, or remain attached to the film. These contaminants are generated more in case of printing failure rather than successful printing.

In case of printing failure, clean the resin tank according to the following instructions.

⚠ Caution

Wear clean nitril gloves before starting cleaning.

3.3.1 Removing Failed Print

Refer to how to remove failed print, please refer to [Resin Tank] and [Platform] sections of [5.Maintenance].

⚠ Caution

- Use fingers or rubber scrapper to remove residues of prints sticking to film and cured resin or particles floating in resin.
- Do not scrape the bottom of resin tank too strongly. Film can loosen or tear out.

3.3.2 Cleaning Resin Tank & Platform

Refer to how to clean resin tank and platform, please refer to [Resin Tank] and [Platform] sections of [5.Maintenance].

In case of printing failure, more debris or contaminants can exist in the resin. It is recommended that you should use filter to remove residual contaminants.

4. Replacing Consumables

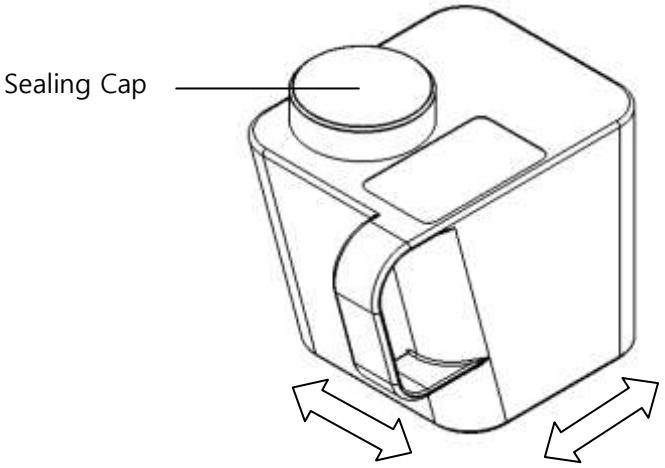
4.1 Replacing Resin Cartridge

1 Preparation for replacing

Photo curable resin is composed of various chemical ingredients. For the best print quality, shake new resin cartridge before replacing in order to mix up well all ingredients.

⚠ Caution

Ensure a sealing cap is firmly closed before shaking.

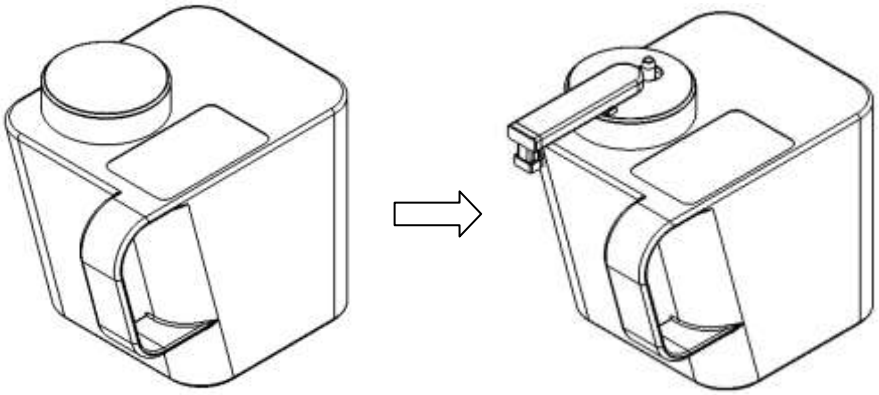


Reference

For the best print quality, shake resin cartridge at least one a week, so that ingredients are well mixed

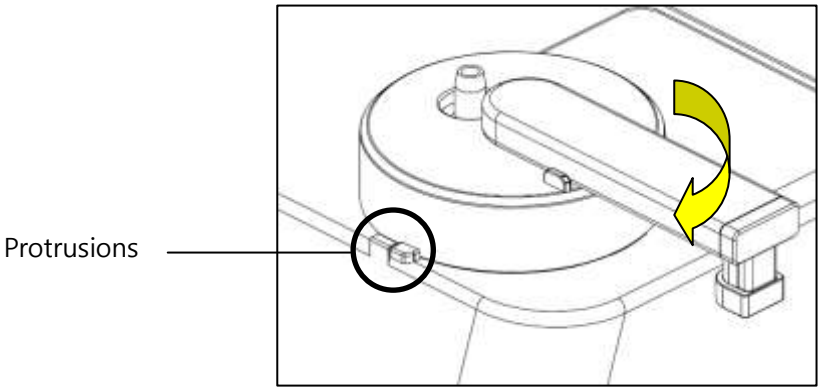
2 Replacing cap

Remove a sealing cap, and assemble a resin supply cap.



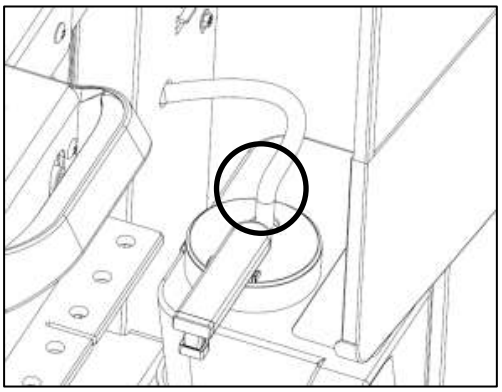
Important

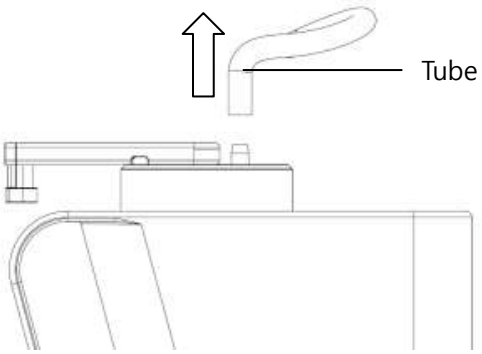
If the cap is not completely closed, there may be a problem in resin supply. You must close the cap until the protrusions on the cartridge and cap are in contact each other.



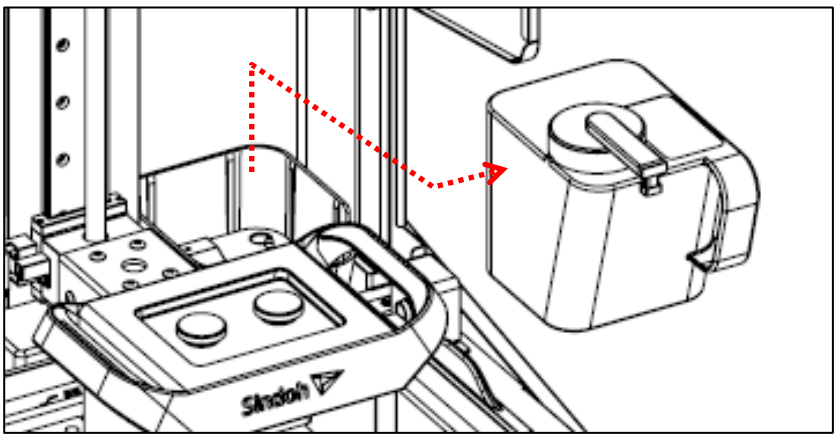
3 Removing used resin cartridge

Pull out the resin supply tube from the cartridge.





Lift the resin cartridge using handle, and take out the cartridge out of the machine.

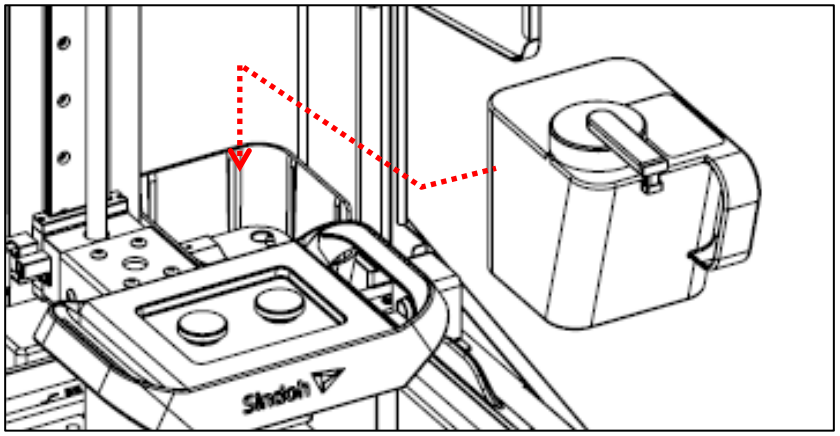


⚠ Caution

If resin remains in used cartridge, replace resin supply cap with sealing cap to prevent leakage of resin and curing. If resin supply cap is not replaced with sealing cap, resin can leak or can be cured though the hole existing in the resin supply cap.

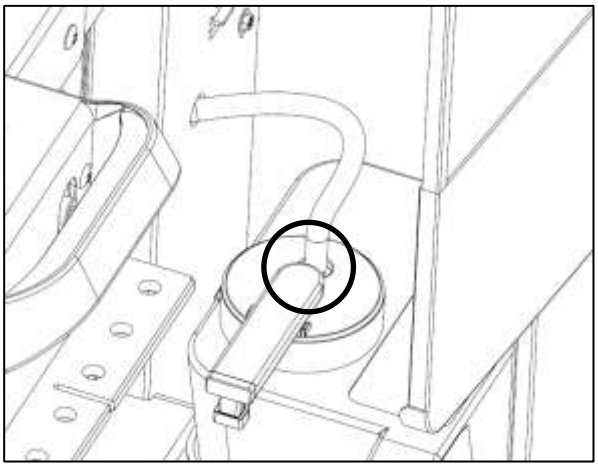
4 Installing new resin cartridge

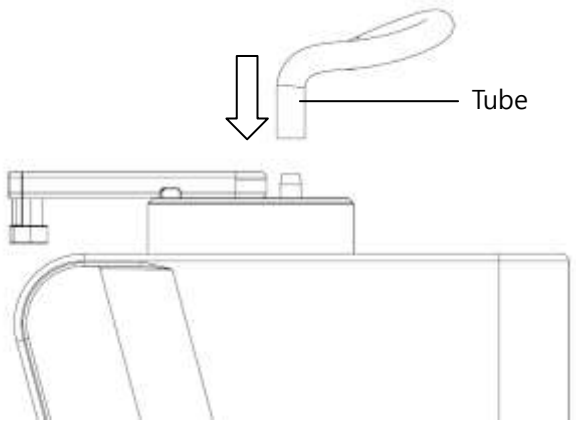
Install new resin cartridge in the housing inside of the machine.



5 Inserting resin supply tube

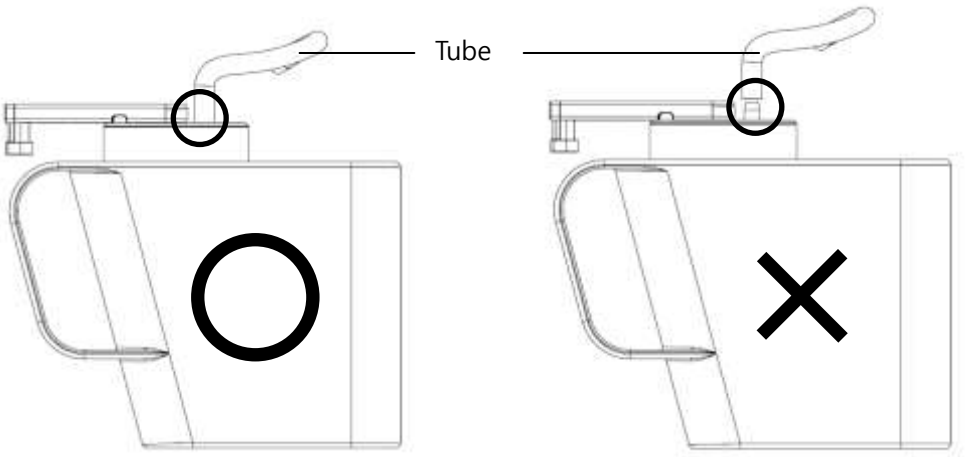
Insert resin supply tube into the boss of resin supply cap. This tube connects air pump with resin cartridge.





Important

If air pump tube is not properly connected to resin supply cap, there may be a problem with resin supplying. Ensure that the end of tube is pushed completely down up to the bottom of the resin cartridge.



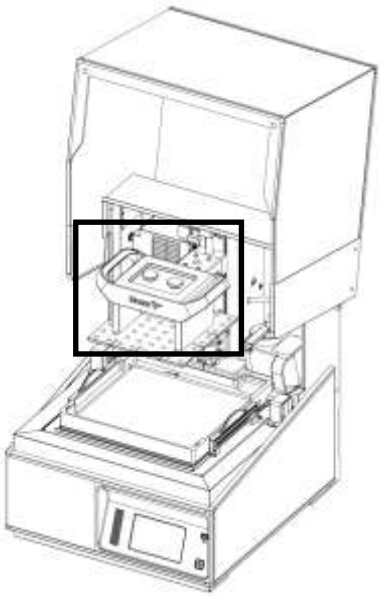
4.2 Replacing Platform

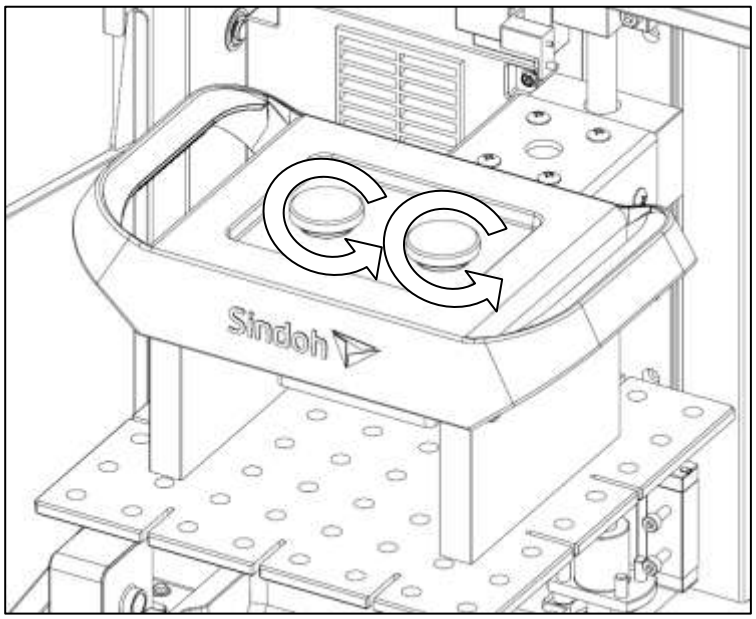
⚠ Caution

Wear clean nitril gloves before starting cleaning.

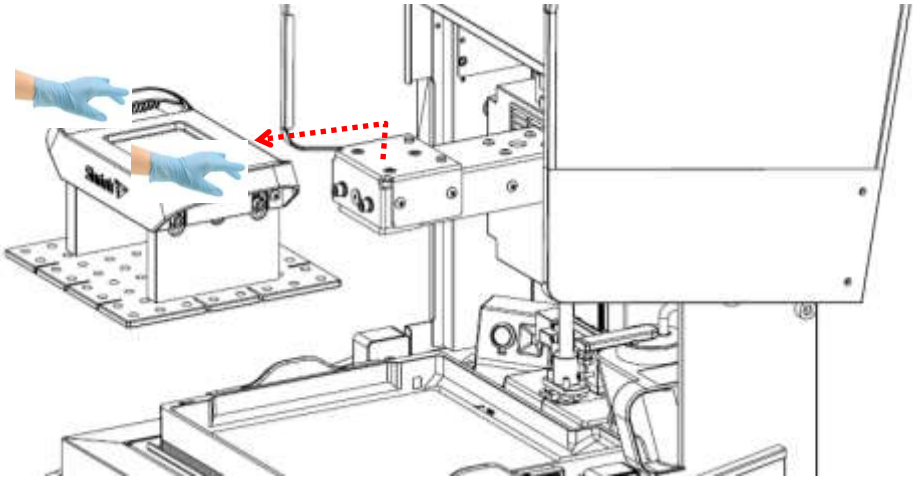
1 Removing the current platform

Open the orange cover, and remove two platform locking knobs by turning in counter-clockwise direction.





Hold the platform with both hands grasping handles, and remove it from the machine.



⚠ Caution

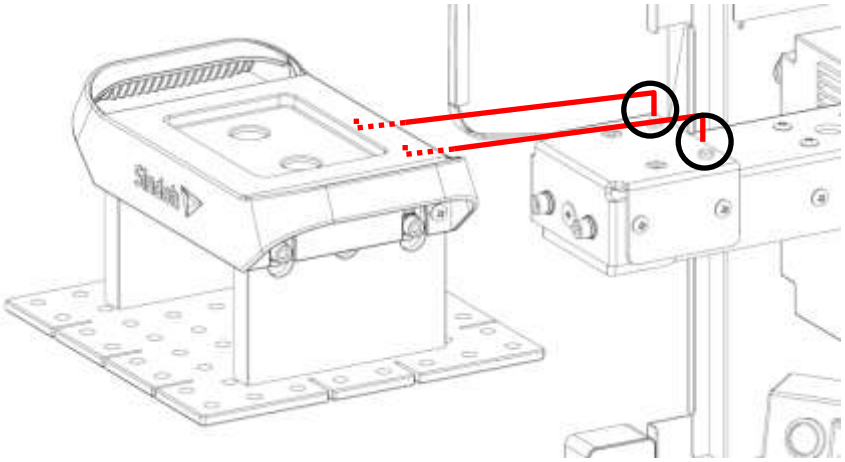
Be careful not to drop the platform during handling it. If platform is dropped on the machine or user by accident, dropping impact of the platform may result in damage to the device or injury to user.

2 Installing a new platform

Place a new platform on the mount in the exactly reverse order of removing the platform, and secure it with two locking knobs by turning them in clockwise direction.

Important

When placing a platform on the mount, align two protrusions of the mount with platform's holes. If they are not aligned, platform will not be installed properly.



3 Leveling the platform

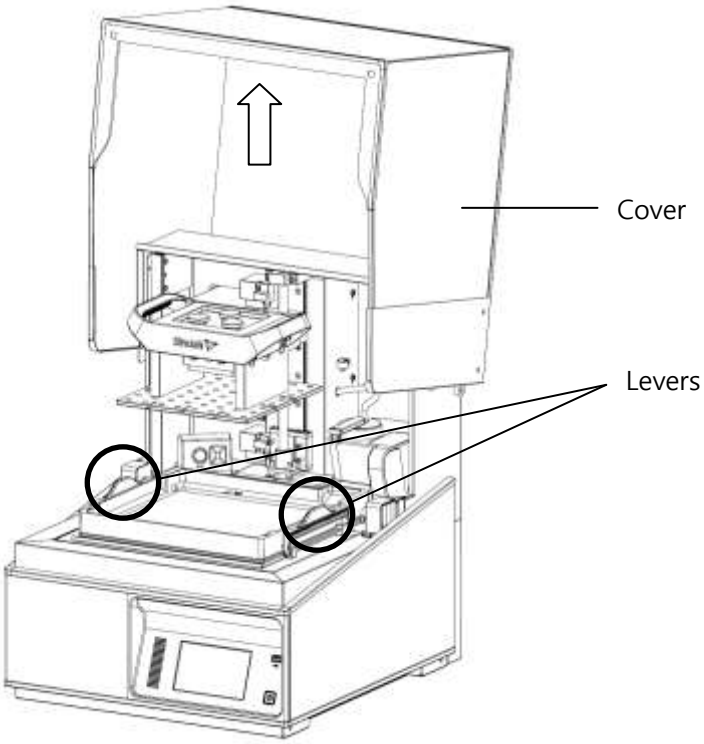
Once the new platform is installed, proceed platform leveling process to adjust the alignment between platform and resin tank. For details of platform leveling, refer to [Platform Leveling] of [3. UI Menu].

4.3 Replacing Resin Tank

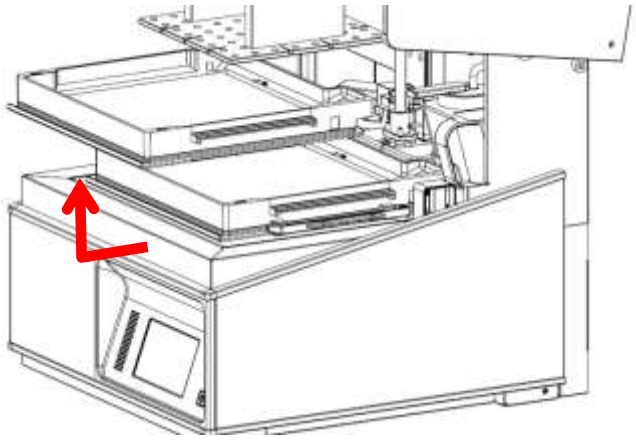
4.3.1 Replacing Resin Tank

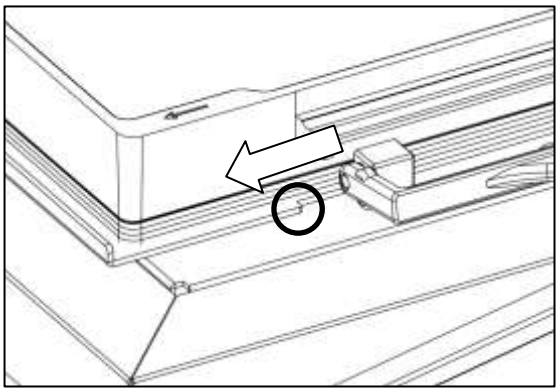
1 Removing the current resin tank

Open the orange cover, and release two locking levers in left/right side of resin tank.



To remove the current resin tank, pull the resin tank slightly forward and lift it up.



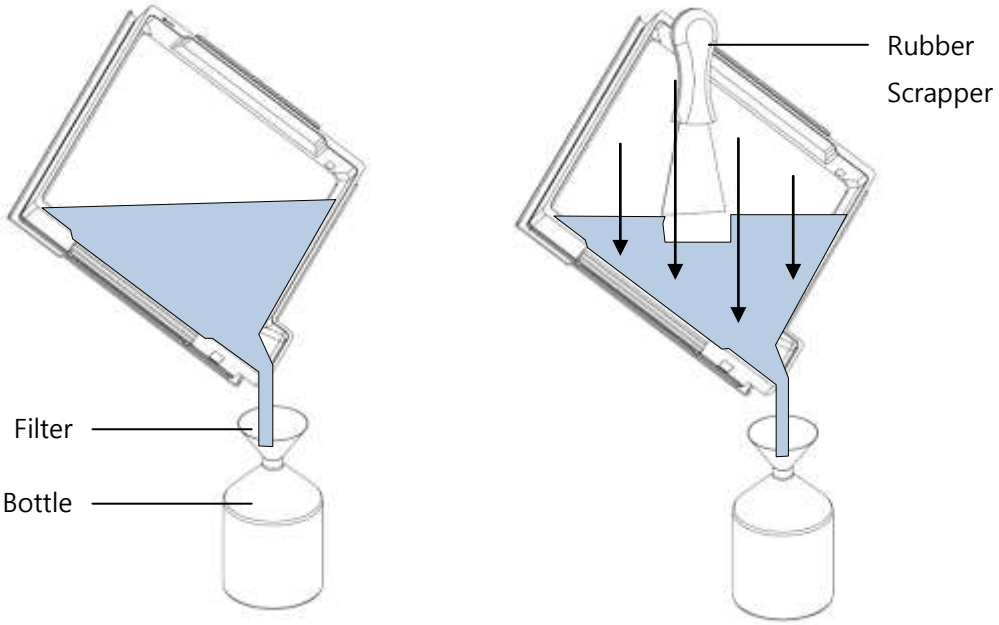


Reference

To lift up the resin tank, it needs to be pulled forward so that the projection of the resin tank is completely out of the locking lever.

2 Removing remaining resin

If resin remains in the resin tank, pour all remaining resin through filter and store in the bottle. If resin does not flow down well, use rubber scrapper to scrape down.

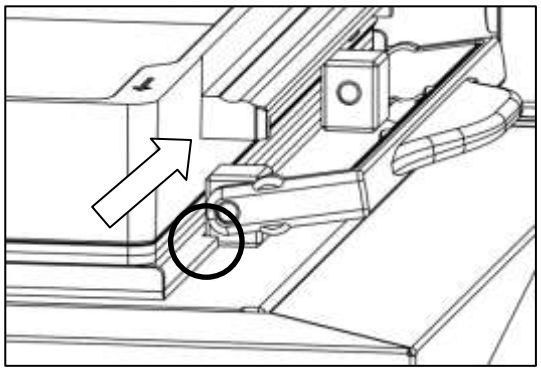


⚠ Caution

- Use a safe bottle made of stainless steel or transparent PE/PP plastic. It not, resin can be pigmented, or bottle can be melted down and mixed with resin.
- Be careful not to drop or splash resin when pouring resin.

3 Installing a new resin tank

Place a new resin tank in the exactly reverse order of removing the resin tank, and secure it with two locking levers.



Reference

To lock the resin tank using locking levers, push the resin tank until the projection of the resin tank touches the cube where locking lever hinge is assembled.

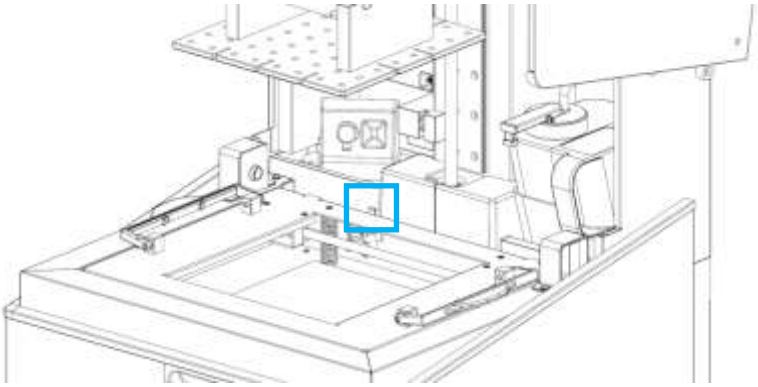
4 Leveling platform

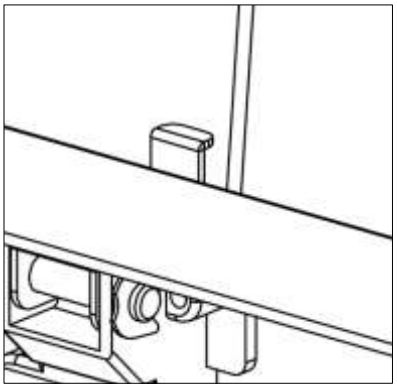
It is necessary to perform a platform leveling process when new resin tank is installed. Please refer to [Platform Leveling] for details of leveling platform.

Reference

To check if resin tank is properly installed, there is an actuator lever in the backside of resin tank. If this lever is actuated by any accidents, it is considered that resin tank is installed even though resin tank does not exist in place.

Please be careful not to keep this lever pressed by user's arbitrary manipulations.





4.3.2 Replacing Release Film

⚠ Caution

Wear clean nitril gloves before starting cleaning.

If film is seriously damaged, replace it according the following procedure. Contact your local service center regarding ordering film replacement kit.

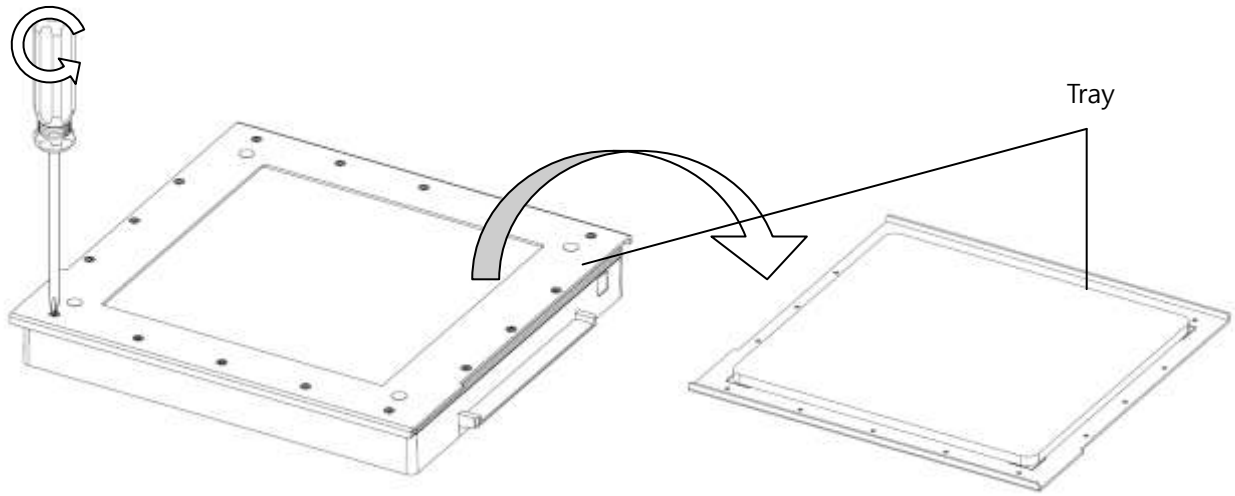
1 Cleaning resin tank

For details of how to clean resin tank, refer to [Resin Tank] of [5.Maintenance].

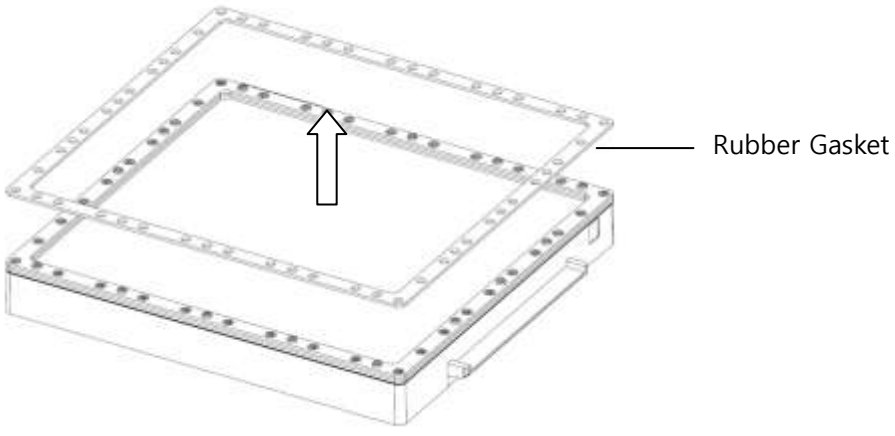
2 Removing transparent window

Turn the resin tank upside down with the transparent window of resin tank facing up. Then, place it on a flat surface.

Using a cross head screw driver enclosed in finishing kit, remove 16 screws and disassembly the tray, which the transparent window is attached to. After taking out the tray, turn the tray again, and place it on a flat surface in a original direction.



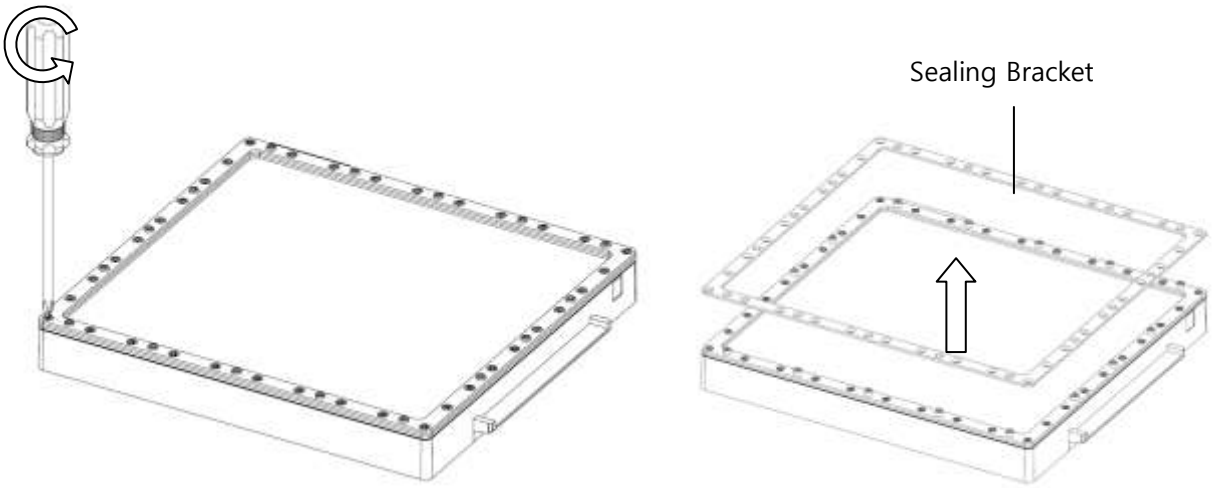
After removing tray, remove a rubber gasket by lifting it up.



Check if tray and gasket gets resin on them, and if necessary, clean them with Isopropyl alcohol (IPA) and paper towel.

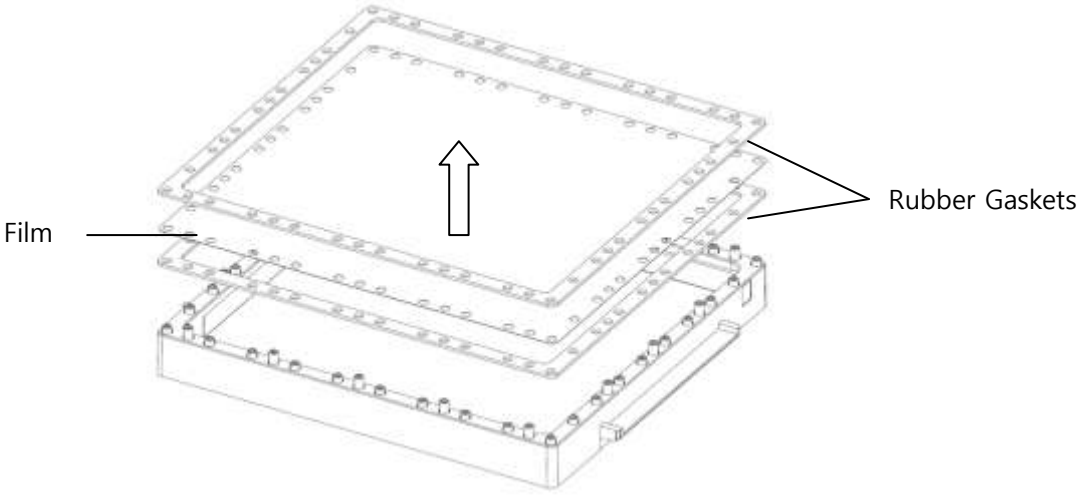
3 Removing a sealing bracket

Remove 36 screws to disassembly a sealing bracket using a crosshead screw driver.



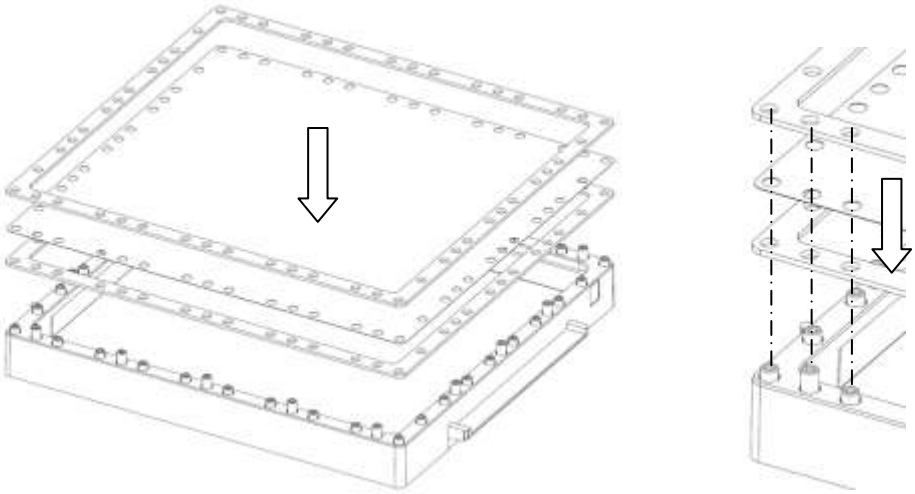
4 Removing a release film

After removing a sealing bracket, remove two rubber gaskets and release film. Clean gaskets with Isopropyl alcohol (IPA) and paper towel, and scrap the release film.



5 Assembling a new film

Place back in a new release film between rubber gaskets in the exactly reverse order of removing.

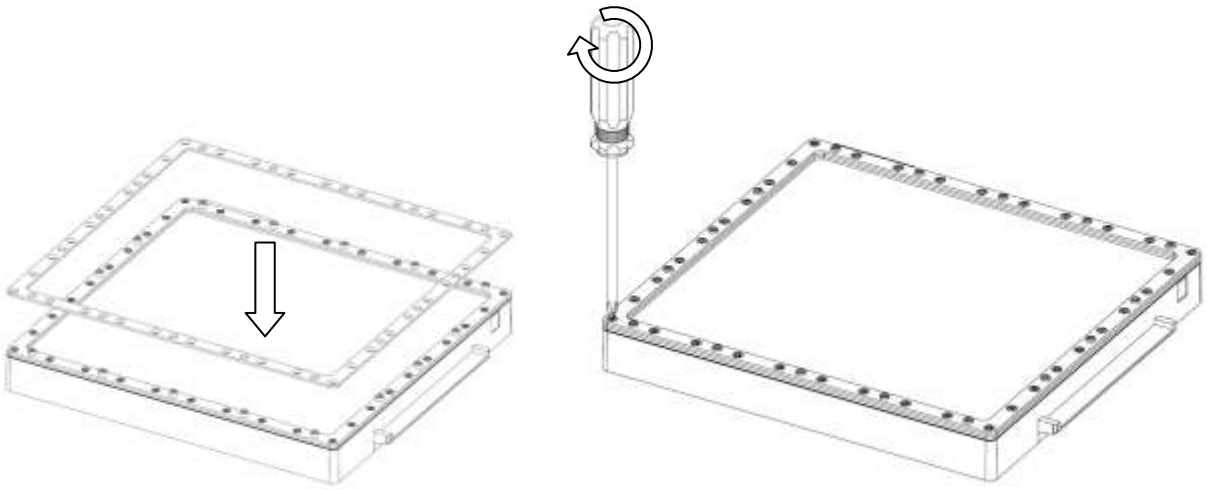


Important

Align protrusions of the resin tank with gaskets and film well. If film or gasket is placed over the protrusions, they may be damaged.

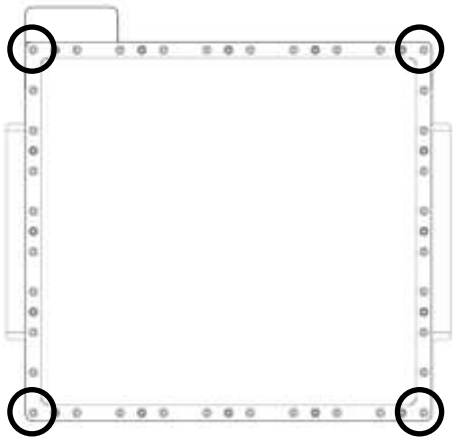
5 Assembling a sealing bracket

Put a sealing bracket on top and fasten 36 screws back.



Important

Fasten 4 screws in every corner first, and do the same for the other 32 screws.



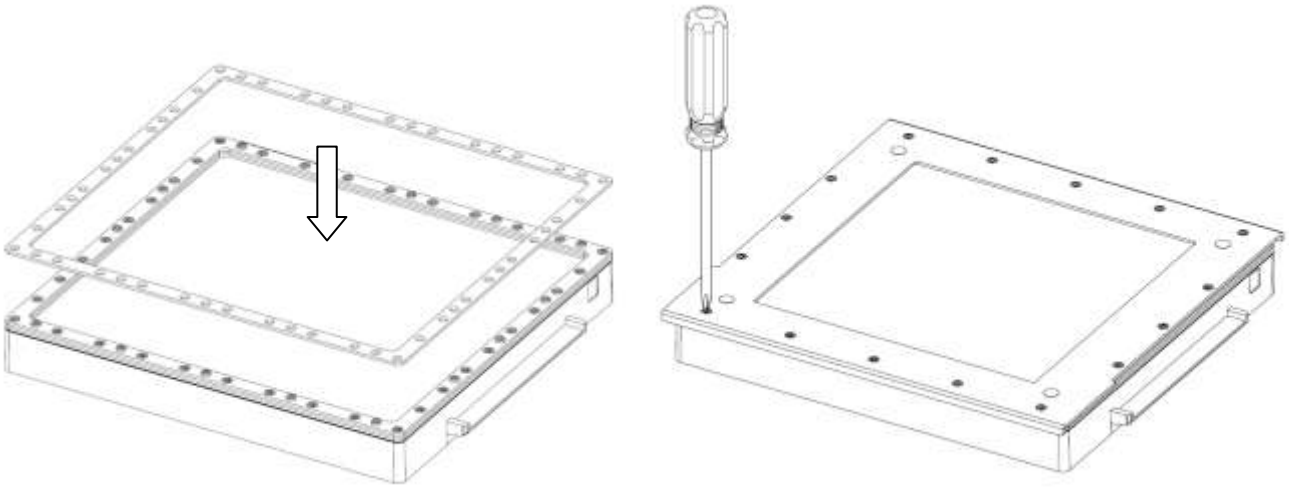
7 Cleaning the release film and transparent window

If any contaminants exist between film and window, it is impossible to remove them. Therefore, it is necessary to clean up the film and the window before putting back the tray.

Clean the release film with some Isopropyl alcohol (IPA) and paper towel. For transparent window, use clean microfiber cloth and a dedicated cleaner for acryl (PMMA) material, for example, NOVUS No.1 Plastic Clean and Shine. Non-microfiber cloth or paper towel can scratch the transparent window.

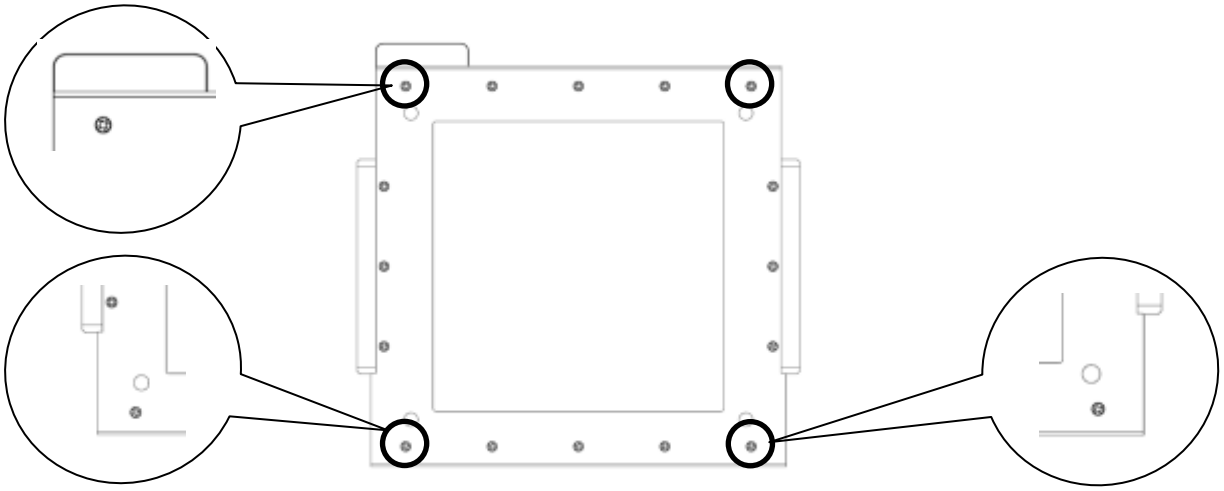
8 Assembling back the tray

Place a rubber gasket on top first, and assemble the tray with 16 screws.



Important

- Pay attention to the orientation when assembling the tray. Make sure that the protruded parts on the left and right sides of the tray are to be positioned opposite the outlet of resin tank. If assembly direction is wrong, the resin tank will not be installed.
- When assembling tray, fasten 4 screws in the corner and do the same to the other 12 screws.



9 Installing the resin tank

Check if any contaminants, fingerprint, dirt remain in the film and transparent window. If everything is OK, install the resin tank.

Notice to Users

Type	Notice
• **Class A equipment (commercial telecast equipment)**	This equipment is a Class A EMC (Electromagnetic compatible) equipment, and should not be use in household locations
• **Class B equipment (domestic telecast equipment)**	This equipment is a Class B EMC (Electromagnetic compatible) equipment for household purposes, available to be used in any location.

※ This Product is a Class A equipment.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